Application for Locally Adopted Energy Standards by the City of Morgan Hill

In Accordance With Section 10-106 of the California Code of Regulations, Title 24, Part 1

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Submitted by:

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Cost effectiveness data referenced from:

"City of Palo Alto's Revised Energy Efficiency Ordinance Cost-Effectiveness Study" conducted by Michael Gabel (Gabel Associates, LLC) dated October 6, 2009

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1.0 Executive Summary

The City of Morgan Hill has researched and reviewed the feasibility and cost-effectiveness of building permit applicants exceeding the 2008 Building Energy Efficiency Standards (Title 24, Part 6) to meet minimum energy-efficiency requirements of LEED and GreenPoint Rated. On October 7, 2009 the Morgan Hill City Council unanimously passed Ordinance No. 1953 adopting mandatory sustainable building regulations for residential and commercial building projects. The sustainable building ordinance specifies use of the U. S. Green Building Council LEED rating system for nonresidential buildings and the Build It Green GreenPoint Rated system for residential buildings. Both rating systems specify minimum energy efficiency standards for buildings that either meet or exceed the requirements of the 2008 state standards. Furthermore, the Morgan Hill Sustainable Building Ordinance ensures that at no time will a project fail to meet 2008 Title 24 Building Energy Efficiency Standards.

The City of Morgan Hill would in turn appreciate the California Energy Commission approval at the earliest possible date, or no later than the estimated local effective date of January 2010. City staff has worked closely with CEC staff throughout the summer and fall of 2009 to prepare the ordinance for commission approval.

On October 12th, 2009 the City of Morgan Hill submitted an application for locally adopted energy standards to the CEC. However, the CEC made further recommendations and the original ordinance was amended and introduced by City Council on December 2nd, 2009.

The City of Morgan Hill's sustainable building ordinance is modeled after the City of Palo Alto's green building ordinance, providing a consistent and regional approach for the development community. The City of Palo Alto's application to increase energy efficiency standards above 2008 Title 24 Building Energy Efficiency Standards has been submitted to the Energy Commission and is based on the cost effectiveness study provided by Gabel Associates, LLC. This application references the findings in the study because Morgan Hill is located within the same climate zone and Morgan Hill's sustainable building ordinance is consistent with Palo Alto's green building ordinance. City staff also received approval from CEC staff to utilize Palo Alto's study with this application.

Morgan Hill's proposed sustainable building ordinance has been designed with several key criteria in mind:

- Wherever possible, consistency with the structure, format and calculation methods of the 2008 Title 24 Building Energy Efficiency Standards;

- Meeting local energy compliance requirements as defined by the rating systems in the Ordinance which exceed the current Title 24 standards; and,

- The provision of flexibility for building permit applicants in meeting the Ordinance by the performance approach using building and appliance energy measures.

This application to the California Energy Commission conforms to the requirements laid out in Section 10-106 of the California Code of Regulations, Title 24, Part 1, *LOCALLY ADOPTED ENERGY STANDARDS*. The proposed ordinance shall take effect only after the Commission has reviewed and formally approved the proposed local energy standards as meeting all requirements of Section 10-106, and the Ordinance has been filed with the Building Standards Commission.

Statement per Section 10-106(b)3. The main features of the City's Sustainable Building Ordinance are summarized in Tables 1, 2 and 3 below.

Table 1: Sustainable Residential Development Standards

Applicable Project			
Residential, New Construction	**Minimum Sustainability Standard**		**Party Verification**
New Single Family or Multi-Family Developments	**≤ 2,000 sf per unit** 70 BIG points* or LEED® Certified	**> 2,000 sf per unit** 70 BIG points + 1 point per additional 70 sf (150 point maximum)* If using the LEED® rating system, must obtain LEED® Silver Certification	Internal GreenPoint Rated Verification for BIG checklist or Internal LEED ®AP Verification for LEED® checklist
Residential, New Construction Additions	**Minimum Sustainability Standard**	**Verification**	
Addition < 250 square feet	Not Applicable		
Addition ≥ 250 square feet	25 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	
Addition ≥ 700 square feet	50 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	
Renovations and Remodels			
Permit valuation < $100,000	Not Applicable		
Permit valuation** ≥ $100,000	25 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	
Permit valuation** ≥ $250,000	50 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	

Note: All projects must, at minimum, demonstrate compliance with the California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code.

*Community points in Build It Green's checklist are excluded from the sustainability standard and the project is required to meet minimum point requirements within the checklist categories (energy, water, resource, and indoor air quality.)
** Valuations are subject to change based on the annual Consumer Price Index (CPI) for new construction or other adopted valuation method adopted by the City of Morgan Hill

Table 2: Sustainable Commercial Development Standards

Applicable Project Type	Sustainability Standard	Verification
Commercial, New Construction and Additions		
Additions < 1,000 square feet	Not Applicable	
New/Additions Construction ≥ 1,000 square feet	16 LEED® Points	Internal LEED® AP Verification
New/ Additions ≥ 5,000 square feet	LEED® Silver	
Commercial, Renovations/Tenant Improvements		
Permit valuation < $350,000	Not Applicable	
Small, renovations** ≥ $350,000 permit valuation	10 LEED® Points	Internal LEED® AP Verification
Medium, renovations** ≥ $500,000 permit valuation	LEED® Certified	
Large, renovations** ≥ $1,500,000	LEED® Silver	
Note: All projects must, at minimum, demonstrate compliance with the California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code. ** Valuations are subject to change based on the annual Consumer Price Index (CPI) for new construction or other adopted valuation method adopted by the City of Morgan Hill.		

Table 3: Mixed Use Development Thresholds and Standards

Applicable Project Type	Standard	Verification
Mixed Use, New Construction		
New ≤ 10,000 square feet	The project shall comply with residential minimum sustainability standards for the residential portion of the development; and For the commercial portion, the development shall be required to: o Exceed California Title 24 energy requirements by 10-15% o Provide a built-in recycling center per LEED standards in an easily accessible location, such as the kitchen facility o Use LEED® approved renewable or 10 to 20 percent recycled content carpeting and/or flooring to the extent that is it is included within the project's scope of work. o Use LEED® approved low VOC adhesives, paints, flooring, and furnishings to the extent that it is included within the project's scope of work.	Internal GreenPoint rated verification and/or LEED® AP Verification
New ≥ 10,000 square feet	Same standards apply as in Mixed Use New Construction ≤ 10,000. In addition, the development shall provide bicycle storage and a changing room facility that includes shower(s.) The changing room can be in the restroom instead of a separate room.	
Mixed Use, Additions, Tennant Improvements and Remodels	For additions and remodels, only that component of the project triggering compliance with the minimum standards for compliance in Tables 1 or 2 shall apply. If the project is a major renovation of both residential and commercial components, the applicant shall be allowed to use standards for New Mixed Use buildings.	
Note: All projects must, at minimum, demonstrate compliance with the California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code.		

2.0 Impacts of the New Ordinance

The following data has been developed and compiled from individual case studies in Palo Alto by Michael Gabel (Gabel Associates) as a means of illustrating the energy cost-effectiveness of a sustainable building ordinance. The case studies are applicable to Morgan Hill's development activity because it is located in the same climate zone and the proposed sustainability standards in Morgan Hill are consistent with Palo Alto's green building standards.

The goal of the case studies is to provide relatively real-world order-of- magnitude results for a local jurisdiction to understand and calibrate energy cost and impacts of a local sustainable building ordinance or energy ordinance. In this limited study no attempt has been made to gather statistically significant data that can be applied to all new construction projects and thereby determine macro-effects of specific policy decisions.

The energy performance impacts of the sustainable building ordinance have been evaluated using case studies that reflect the broad range of building types:

- Three single family home designs: 1,705 sf; 2,682 sf; 5,074 sf
- Single family addition analyzed alone (without existing house): 1,295 sf
- Low-rise multi-family residential building: 8,442 sq.ft., 2-story, 8 dwelling units
- High-rise multi-family residential building: 40-unit, 36,800 sf
- 1-Story nonresidential building: 10,580 sf
- 5-Story nonresidential building: 52,900 sf

The methodology used in the case studies replicates how actual buildings are designed and evaluated to meet or exceed the State's energy efficiency standards.

a) Each prototype building design is tested for compliance with the 2008 Standards, and all energy efficiency measures are adjusted with commonly used construction methods to just barely meet the Standards. The energy efficiency measures chosen are a combination of measures which reflects how designers and builders are most likely to achieve a specified level of performance.

b) Starting with a 2008 Standards minimally compliant set of measures, various energy related elements are changed to just reach the minimum energy performance required by the Ordinance (e.g. 15% better than 2008 Title 24). In this study, the design choices selected are based on many years of experience by Michael Gabel (Gabel Associates, LLC) working with architects, mechanical engineers and builders coupled with general knowledge of the relative incremental costs of most measures. The intent of this approach is to ensure that the study reflects how building energy performance is actually evaluated and used to select final energy efficiency measures.

c) A minimum and maximum range of incremental costs of added energy efficiency measures is established by a variety of research means. A construction cost estimator,

Building Advisory LLC, was contracted to conduct research and surveys to derive accurate and current costs of measures. Site energy in KWh and Therms, is calculated for each model run to establish the annual energy savings, energy cost savings and CO2-equivalent reductions in greenhouse gases.

2.1 Single Family Homes

Energy design descriptions of the single family building prototypes which just meet the 2008 Title 24 Building Energy Efficiency Standards:

Single Family House: 1,705 square feet, 2-story, 16.3% glazing/floor area ratio

– Option A

Energy Efficiency Measures
R-38 Roof w/ Radiant Barrier
R-13 Walls
R-0 Slab on Grade
Low E2 Vinyl Windows, U=0.36, SHGC=0.30
Furnace: 80% AFUE
Air Conditioner: 13 SEER
R-6 Attic Ducts
Reduced Duct Leakage/Testing (HERS)
50 Gallon Gas Water Heater: EF=0.60

Single Family House: 1,705 square feet, 2-story, 16.3% glazing/floor area ratio

– Option B

Energy Efficiency Measures
R-38 Roof w/ Radiant Barrier
R-13 Walls
R-0 Slab on Grade
Low E2 Vinyl Windows, U=0.36, SHGC=0.30
Furnace: 80% AFUE
Air Conditioning: None
R-6 Attic Ducts
Reduced Duct Leakage/Testing (HERS)
50 Gallon Gas Water Heater: EF=0.60

Single Family House: 2,682 square feet, 2-story, 21.1% glazing/floor area ratio

– Option A

Energy Efficiency Measures
R-38 Roof w/ Radiant Barrier
R-15 Walls
R-19 Raised Floor
Low E2 Vinyl Windows, U=0.36, SHGC=0.30
Furnace: 80% AFUE
Air Conditioner: 13 SEER
R-8 Attic Ducts
50 Gallon Gas Water Heaters: EF=0.60

Single Family House: 2,682 square feet, 2-story, 21.1% glazing/floor area ratio

– Option B

Energy Efficiency Measures
R-38 Roof w/ Radiant Barrier
R-15 Walls
R-19 Raised Floor
Low E2 Vinyl Windows, U=0.36, SHGC=0.30
Furnace: 80% AFUE
Air Conditioner: None
R-8 Attic Ducts
50 Gallon Gas Water Heaters: EF=0.60

Single Family House: 5,074 square feet, 2-story, 22.7% glazing/floor area ratio – Option A

Energy Efficiency Measures
R-38 Roof w/ Radiant Barrier
R-13 Walls
R-19 Raised Floor
Housewrap
Low E2 Vinyl Windows, U=0.36, SHGC=0.30
(2) Furnaces: 80% AFUE
(2) Air Conditioners: 13 SEER
(2) Air Conditioners: TXV + Refrig. Charge (HERS)
R-6 Attic Ducts
Reduced Duct Leakage/Testing (HERS)
(2) 50 Gallon Gas Water Heaters: EF=0.62
Pipe Insulation

Single Family House: 5,074 square feet, 2-story, 22.7% glazing/floor area ratio – Option B

Energy Efficiency Measures
R-38 Roof w/ Radiant Barrier
R-13 Walls
R-19 Raised Floor
Housewrap
Low E2 Vinyl Windows, U=0.36, SHGC=0.30
(2) Furnaces: 80% AFUE
(2) Air Conditioners: 13 SEER
(2) Air Conditioners: TXV + Refrig. Charge (HERS)
R-6 Attic Ducts
Reduced Duct Leakage/Testing (HERS)
(2) 50 Gallon Gas Water Heaters: EF=0.62
Pipe Insulation

Energy Measures Needed to Meet the City's Ordinance

The following energy efficiency features have been modified from the Title 24 set of measures so that the home designs use 15% less TDV energy than the corresponding Title 24 base case designs per the 2008-2011 Build it Green GreenPoint Rated minimum energy requirement. The incremental first cost estimate to provide each measure in comparison with the equivalent base case measure is listed to the right in the following tables.

The incremental energy efficiency improvements specified above to meet the proposed Ordinance requirements are variables selected by designer, builder or owner. There are a number of considerations in choosing the final mix of energy efficiency measures including first cost, aesthetics, maintenance and replacement.

15% Better Than Title 24 Base Case, Option A **1705 sf** **Climate Zone 4**

Energy Efficiency Measures	Change Type	Incremental Cost Estimate		
		Min	Max	Avg
R-38 Roof w/ Radiant Barrier	-	$ -	$ -	$ -
R-19 Walls (from R-13): 1,328 sf @ $0.31 to $0.54/sf	Upgrade	$ 412	$ 717	$ 564
R-0 Slab on Grade	-	$ -	$ -	$ -
Low E2 Vinyl Windows, U=0.36, SHGC=0.30	-	$ -	$ -	$ -
Furnace: 90% AFUE (from 80% AFUE)	Upgrade	$ 500	$ 1,000	$ 750
Air Conditioner: 13 SEER, 11 EER (HERS)	Upgrade	$ 25	$ 75	$ 50
Air Conditioner: TXV + Refrig. Charge (HERS)	Upgrade	$ 100	$ 150	$ 125
R-8 Attic Ducts (from R-6)	Upgrade	$ 225	$ 325	$ 275
Reduced Duct Leakage/Testing (HERS)	-	$ -	$ -	$ -
50 Gallon Gas Water Heater: EF=0.62 (from EF=0.60)	Upgrade	$ 100	$ 200	$ 150
Total Incremental Cost of Energy Efficiency Measures:		**$ 1,362**	**$ 2,467**	**$ 1,914**
Total Incremental Cost per Square Foot:		**$ 0.80**	**$ 1.45**	**$ 1.12**

15% Better Than Title 24 Base Case, Option B **1705 sf** **Climate Zone 4**

Energy Efficiency Measures	Change Type	Incremental Cost Estimate		
		Min	Max	Avg
R-38 Roof w/ Radiant Barrier	-	$ -	$ -	$ -
R-19 Walls (from R-13): 1,328 sf @ $0.31 to $0.54/sf	Upgrade	$ 412	$ 717	$ 564
R-0 Slab on Grade	-	$ -	$ -	$ -
Low E2 Vinyl Windows, U=0.36, SHGC=0.30	-	$ -	$ -	$ -
Furnace: 92% AFUE (from 80% AFUE)	Upgrade	$ 500	$ 1,200	$ 850
Air Conditioning: None	-	$ -	$ -	$ -
R-8 Attic Ducts (from R-6)	Upgrade	$ 225	$ 325	$ 275
Reduced Duct Leakage/Testing (HERS)	-	$ -	$ -	$ -
50 Gallon Gas Water Heater: EF=0.62 (from EF=0.60)	Upgrade	$ 100	$ 200	$ 150
Total Incremental Cost of Energy Efficiency Measures:		**$ 1,237**	**$ 2,442**	**$ 1,839**
Total Incremental Cost per Square Foot:		**$ 0.73**	**$ 1.43**	**$ 1.08**

15% Better Than Title 24 Base Case, Option A **2682 sf** **Climate Zone 4**

Energy Efficiency Measures	Change Type	Incremental Cost Estimate		
		Min	Max	Avg
R-38 Roof w/ Radiant Barrier	-	$ -	$ -	$ -
R-15 Walls	-	$ -	$ -	$ -
R-19 Floor	-	$ -	$ -	$ -
Low E2 Vinyl Windows, U=0.36, SHGC=0.30	-	$ -	$ -	$ -
Furnace: 90% AFUE (from 80% AFUE)	Upgrade	$ 500	$ 1,000	$ 750
Air Conditioner: 13 SEER, 11 EER (HERS)	Upgrade	$ 25	$ 75	$ 50
Air Conditioner: TXV + Refrig. Charge (HERS)	Upgrade	$ 100	$ 150	$ 125
R-8 Attic Ducts	-	$ -	$ -	$ -
Reduced Duct Leakage/Testing (HERS)	Upgrade	$ 300	$ 600	$ 450
50 Gallon Gas Water Heater: EF=0.62 (from EF=0.60)	Upgrade	$ 100	$ 200	$ 150
Total Incremental Cost of Energy Efficiency Measures:		**$ 1,025**	**$ 2,025**	**$ 1,525**
Total Incremental Cost per Square Foot:		**$ 0.38**	**$ 0.76**	**$ 0.57**

15% Better Than Title 24 Base Case, Option B **2682 sf** **Climate Zone 4**

Energy Efficiency Measures	Change Type	Incremental Cost Estimate		
		Min	Max	Avg
R-38 Roof w/ Radiant Barrier	-	$ -	$ -	$ -
R-15 Walls	-	$ -	$ -	$ -
R-19 Floor	-	$ -	$ -	$ -
Low E2 Vinyl Windows, U=0.36, SHGC=0.30	-	$ -	$ -	$ -
Housewrap: 2,137 sf @ $0.50 to 0.75/sf	Upgrade	$ 1,069	$ 1,603	$ 1,336
Furnace: 90% AFUE (from 80% AFUE)	Upgrade	$ 500	$ 1,000	$ 750
Air Conditioner: None	-	$ -	$ -	$ -
R-8 Attic Ducts	-	$ -	$ -	$ -
Reduced Duct Leakage/Testing (HERS)	Upgrade	$ 300	$ 600	$ 450
50 Gallon Gas Water Heater: EF=0.62 (from EF=0.60)	Upgrade	$ 100	$ 200	$ 150
Total Incremental Cost of Energy Efficiency Measures:		**$ 1,969**	**$ 3,403**	**$ 2,686**
Total Incremental Cost per Square Foot:		**$ 0.73**	**$ 1.27**	**$ 1.00**

15% Better Than Title 24 Base Case, Option A **5074 sf** **Climate Zone 4**

Energy Efficiency Measures	Change Type	Incremental Cost Estimate		
		Min	Max	Avg
R-38 Roof w/ Radiant Barrier	-	$ -	$ -	$ -
R-19 Walls (from R-13): 2,590 sf @ $0.31 to $0.54/sf	Upgrade	$ 803	$ 1,399	$ 1,101
R-30 Raised Floor (from R-19): 3,044 sf @ $0.25 to $0.35	Upgrade	$ 761	$ 1,065	$ 913
Housewrap	-	$ -	$ -	$ -
Low E2 Vinyl Windows, U=0.36, SHGC=0.30	-	$ -	$ -	$ -
(2) Furnaces: 92% AFUE (from 80% AFUE)	Upgrade	$ 1,000	$ 2,400	$ 1,700
(2) Air Conditioners: 13 SEER, 11 EER (HERS)	Upgrade	$ 50	$ 150	$ 100
(2) Air Conditioners: TXV + Refrig. Charge (HERS)	-	$ -	$ -	$ -
R-8 Attic Ducts (from R-6)	Upgrade	$ 400	$ 600	$ 500
Reduced Duct Leakage/Testing (HERS)	-	$ -	$ -	$ -
(2) 50 Gallon Gas Water Heaters: EF=0.62	-	$ -	$ -	$ -
Pipe Insulation	-	$ -	$ -	$ -
Total Incremental Cost of Energy Efficiency Measures:		**$ 3,014**	**$ 5,614**	**$ 4,314**
Total Incremental Cost per Square Foot:		**$ 0.59**	**$ 1.11**	**$ 0.85**

15% Better Than Title 24 Base Case, Option B **5074 sf** **Climate Zone 4**

Energy Efficiency Measures	Change Type	Incremental Cost Estimate		
		Min	Max	Avg
R-38 Roof w/ Radiant Barrier	-	$ -	$ -	$ -
R-19 Walls (from R-15): 2,590 sf @ $0.15 to $0.40/sf	Upgrade	$ 389	$ 1,036	$ 712
R-19 Floor	-	$ -	$ -	$ -
Housewrap	-	$ -	$ -	$ -
Super Low E Vinyl Windows, U=0.36, SHGC=0.23, 1151.8 sf @ $1.40 - $1.75 / sf	Upgrade	$ 1,613	$ 2,016	$ 1,814
(2) Furnaces: 90% AFUE (from 80% AFUE)	Upgrade	$ 1,000	$ 2,000	$ 1,500
Air Conditioners: None	-	$ -	$ -	$ -
R-6 Attic Ducts	-	$ -	$ -	$ -
Reduced Duct Leakage/Testing (HERS)	-	$ -	$ -	$ -
(2) 50 Gallon Gas Water Heaters: EF=0.62	-	$ -	$ -	$ -
Total Incremental Cost of Energy Efficiency Measures:		**$ 3,001**	**$ 5,052**	**$ 4,026**
Total Incremental Cost per Square Foot:		**$ 0.59**	**$ 1.00**	**$ 0.79**

2.2 Addition to Existing Home

The energy design description of the addition prototype which just meets the 2008 Title 24 Building Energy Efficiency Standards is listed below:

1-Story 1,295 sf Addition/Remodel, 19.5% glazing/floor area ratio

Energy Efficiency Measures
R-19 Roof w/ Radiant Barrier
R-13 Walls
R-13 Raised Floor
Low E2 Vinyl Windows, U=0.36, SHGC=0.30
Furnace: 80% AFUE
Air Conditioner: 13 SEER
R-8 Attic Ducts
Reduced Duct Leakage/Testing (HERS)
No Water Heating Calculation Allowed for Addition Alone

Energy Measures Needed to Meet the City's Ordinance

15% Better Than Title 24 Option A **1295 sf** **Climate Zone 3**

Energy Efficiency Measures	Change Type	Incremental Cost Estimate		
		Min	Max	Avg
R-38 Roof w/ Radiant Barrier (from R-19 w/Radiant Barrier): 700 sf @ 0.30 to 0.45/sf	Upgrade	$ 210	$ 315	$ 263
R-13 Walls	-	$ -	$ -	$ -
R-19 Raised Floor (from R-13): 700 sf @ $0.10 to $0.25	Upgrade	$ 70	$ 175	$ 123
Quality Insulation Installation (HERS)	Upgrade	$ 450	$ 600	$ 525
Low E2 Vinyl Windows, U=0.36, SHGC=0.30	-	$ -	$ -	$ -
Furnace: 80% AFUE	-	$ -	$ -	$ -
Air Conditioner: 13 SEER	-	$ -	$ -	$ -
R-6 Attic Ducts (from R-8)	Downgrade	$ (325)	$ (225)	$ (275)
Reduced Duct Leakage/Testing (HERS)	-	$ -	$ -	$ -
No Water Heating Calculation Allowed for Addition Alone	-	$ -	$ -	$ -
Total Incremental Cost of Energy Efficiency Measures:		**$ 405**	**$ 865**	**$ 635**
Total Incremental Cost per Square Foot:		**$ 0.31**	**$ 0.67**	**$ 0.49**

15% Better Than Title 24 Option B **1295 sf** **Climate Zone 3**

Energy Efficiency Measures	Change Type	Incremental Cost Estimate		
		Min	Max	Avg
R-30 Roof w/ Radiant Barrier (from R-19 w/Radiant Barrier): 700 sf @ 0.25 to 0.35/sf	Upgrade	$ 175	$ 245	$ 210
R-15 Walls (from R-13): 1,212 sf @ $0.14 to $0.18/sf	Upgrade	$ 170	$ 218	$ 194
R-19 Raised Floor (from R-13): 700 sf @ $0.10 to $0.25	Upgrade	$ 70	$ 175	$ 123
Low E2 Vinyl Windows, U=0.36, SHGC=0.30	-	$ -	$ -	$ -
Furnace: 90% AFUE (from 80% AFUE)	Upgrade	$ 500	$ 1,000	$ 750
Air Conditioner: 13 SEER	-	$ -	$ -	$ -
R-6 Attic Ducts (from R-8)	Downgrade	$ (325)	$ (225)	$ (275)
Reduced Duct Leakage/Testing (HERS)	-	$ -	$ -	$ -
No Water Heating Calculation Allowed for Addition Alone	-	$ -	$ -	$ -
Total Incremental Cost of Energy Efficiency Measures:		**$ 590**	**$ 1,413**	**$ 1,001**
Total Incremental Cost per Square Foot:		**$ 0.46**	**$ 1.09**	**$ 0.77**

2.3 Low-rise Residential Building

Energy design descriptions of the high-rise residential prototypes which just meet the 2008 Title 24 Building Energy Efficiency Standards:

Low-rise Multi-family Residential: 2-story 8,442 square feet, 8 units, 12.5% glazing

Option 1

Energy Efficiency Measures
R-38 Roof w/ Radiant Barrier
R-13 Walls
R-0 Slab on Grade
Low E2 Vinyl Windows, U=0.36, SHGC=0.30
(8) Furnaces: 80% AFUE
(8) Air Conditioners: 13 SEER
R-6 Attic Ducts
(8) 40 Gallon Gas Water Heaters: EF=0.62

Option 2

Energy Efficiency Measures
R-38 Roof w/ Radiant Barrier
R-13 Walls
R-0 Slab on Grade
Low E2 Vinyl Windows, U=0.36, SHGC=0.30
(8) Furnaces: 80% AFUE
Air Conditioners: None
R-6 Attic Ducts
(8) 40 Gallon Gas Water Heaters: EF=0.62

Energy Measures Needed to Meet the City's Ordinance

The following energy features have been modified from the Title 24 set of measures so that the building design uses 15% less TDV energy than the corresponding Title 24 base case design per the 2008-2011 Build it Green GreenPoint Rated minimum energy requirement. The incremental first cost to provide that measure in comparison with the equivalent base case measure is listed to the right.

The incremental energy improvements specified above to meet the proposed Ordinance requirements are variables selected by designer, builder or owner. There are a number of

considerations in choosing the final mix of energy measures including first cost, aesthetics, maintenance and replacement.

15% Better Than Title 24 Base Case, Option A **8442 sf** **Climate Zone 4**

Energy Efficiency Measures	Change Type	Incremental Cost Estimate		
		Min	Max	Avg
R-38 Roof w/ Radiant Barrier	-	$ -	$ -	$ -
R-19 Walls (from R-13): 10,146 sf @ $0.31 to $0.54/sf	Upgrade	$ 3,145	$ 5,479	$ 4,312
R-0 Slab on Grade	-	$ -	$ -	$ -
Housewrap: 10,146 sf @ $0.50 to 0.75/sf	Upgrade	$ 5,073	$ 7,610	$ 6,341
Low E2 Vinyl Windows, U=0.36, SHGC=0.30	-	$ -	$ -	$ -
(8) Furnaces: 80% AFUE	-	$ -	$ -	$ -
(8) Air Conditioners: 13 SEER	-	$ -	$ -	$ -
R-6 Attic Ducts	-	$ -	$ -	$ -
(8) 40 Gallon Gas Water Heaters: EF=0.63 (from 0.62 EF)	Upgrade	$ -	$ 600	$ 300
Total Incremental Cost of Energy Efficiency Measures:		**$ 8,218**	**$ 13,688**	**$ 10,953**
Total Incremental Cost per Square Foot:		**$ 0.97**	**$ 1.62**	**$ 1.30**

15% Better Than Title 24 Base Case, Option B **8442 sf** **Climate Zone 4**

Energy Efficiency Measures	Change Type	Incremental Cost Estimate		
		Min	Max	Avg
R-30 Roof w/ Radiant Barrier (from R-38 w/Radiant Barrier): 4,221 sf @ $0.20 to $0.15/sf	Downgrade	$ (844)	$ (633)	$ (739)
R-21 Walls (from R-13): 10,146 sf @ $0.45 to $0.70/sf	Upgrade	$ 4,566	$ 7,102	$ 5,834
R-0 Slab on Grade	-	$ -	$ -	$ -
Housewrap: 10,146 sf @ $0.50 to 0.75/sf	Upgrade	$ 5,073	$ 7,610	$ 6,341
Low E2 Vinyl Windows, U=0.36, SHGC=0.30	-	$ -	$ -	$ -
(8) Furnaces: 80% AFUE	-	$ -	$ -	$ -
(8) Air Conditioners: 13 SEER	-	$ -	$ -	$ -
R-6 Attic Ducts	-	$ -	$ -	$ -
(8) 40 Gallon Gas Water Heaters: EF=0.62	-	$ -	$ -	$ -
Total Incremental Cost of Energy Efficiency Measures:		**$ 8,795**	**$ 14,079**	**$ 11,437**
Total Incremental Cost per Square Foot:		**$ 1.04**	**$ 1.67**	**$ 1.35**

2.4 High-Rise Residential Building

Energy design descriptions of the high-rise residential prototype which just meet the 2008 Title 24 Building Energy Efficiency Standards:

High-rise Residential: 4-story 36,800 sf, 40 units,
Window Wall Ratio = 35.2%

Energy Efficiency Measures
R-30 Roof
R-19 Metal Stud Walls
R-0 Raised Slab
Low E2 Vinyl Windows, U=0.36, SHGC=0.35
Room PTACs: HSPF=7.2, EER=10.2 (No Ducts)
Central DHW Boiler, AFUE=82.7%

High-rise Residential Energy Measures Needed to Meet the City's Ordinance.

Incremental energy efficiency measures to meet the Ordinance have been evaluated for the above high-rise residential building. The following features have been modified from the Title 24 measures so that this building uses at least 15% less TDV energy than the corresponding base case design. The incremental first cost to provide each measure in comparison with the equivalent base case measure is listed to the right in the following tables.

15% Better Than Title 24 Base Case, Option A **36800 sf**

Energy Efficiency Measures		Change Type	Incremental Cost Estimate Min	Max	Avg
R-30 Cool Roof (Reflectance=0.70, Emmittance=0.75); 9,200 sf @ $0.25 - $0.40/sf		Upgrade	$ 2,300	$ 3,680	$ 2,990
R-19 Metal Stud Walls		-	$ -	$ -	$ -
R-0 Raised Slab		-	$ -	$ -	$ -
Low E2 Vinyl Windows, U=0.36, SHGC=0.25 6,240 sf @ $1.40 - $1.60/sf		Upgrade	$ 8,736	$ 9,984	$ 9,360
Room PTACs: HSPF=7.84, EER=11.2 (No Ducts) units @ $150 - $250/unit	80	Upgrade	$ 12,000	$ 20,000	$ 16,000
Central DHW Boiler, AFUE=82.7%		-	$ -	$ -	$ -
Total Incremental Cost of Energy Efficiency Measures:			**$ 23,036**	**$ 33,664**	**$ 28,350**
Total Incremental Cost per Square Foot:			**$ 0.63**	**$ 0.91**	**$ 0.77**

15% Better Than Title 24 Base Case, Option B **36800 sf**

Energy Efficiency Measures	Change Type	Incremental Cost Estimate		
		Min	Max	Avg
R-30 Roof	-	$ -	$ -	$ -
R-19 Metal Stud Walls	-	$ -	$ -	$ -
R-0 Raised Slab	-	$ -	$ -	$ -
Low E2 Vinyl Windows, U=0.36, SHGC=0.25 6,240 sf @ $1.40 - $1.60/sf	Upgrade	$ 8,736	$ 9,984	$ 9,360
Room PTACs: HSPF=7.84, EER=11.2 (No Ducts) 80 units @ $150 - $250/unit	Upgrade	$ 12,000	$ 20,000	$ 16,000
Central DHW Boiler, AFUE=94%: 2 @ $2000 - $3000 each	Upgrade	$ 3,000	$ 6,000	$ 4,500
Total Incremental Cost of Energy Efficiency Measures:		**$ 23,736**	**$ 35,984**	**$ 29,860**
Total Incremental Cost per Square Foot:		**$ 0.65**	**$ 0.98**	**$ 0.81**

2.5 Non-residential Buildings

The following measures were first evaluated so that the following non-residential prototype building just meets the 2008 standards as follows:

(A) 10,580 sf 1-story building, 24.1% Window Wall Ratio glazing area

- R-30 attic insulation, R-19 in metal frame exterior walls, slab-on-grade 1st floor;
- NFRC-rated Low-E windows: U-factor=0.50, SHGCc=0.38 (e.g., Viracon VE 1-2M) w/ no exterior shading
- Lighting = 0.852 w/sf: 120 2-lamp 4' T8 fixtures @ 62w each and 100 26w CFLs @ 26 w each; 6 50w-halogens; no lighting controls
- (4) 7.5-ton Packaged DX units: 11.0 EER; 80% AFUE; all standard efficiency fan motors
- Ducts in conditioned space, R-4.2 duct insulation
- Domestic hot water assumed to be standard gas water heater

LEED vs. Title 24 Building Energy Performance

The United States Green Building Council's LEED rating system applies a different metric than California's Title 24 to establish a proposed building's energy performance with respect to the required baseline energy performance. LEED 2009 requires the use of an Energy Cost Budget (ECB) method to demonstrate that the annual energy cost of the proposed building is at least 10% less than the annual energy cost of either: (a) the ASHRAE 90.1-2007 baseline reference building; or (b) the 2005 Title 24 standard design. In either case, all site energy must be included as part of the LEED calculation of annual energy cost, which includes exterior lighting, interior lighting, process loads and receptacle loads.

By comparison, the energy performance metric used in California's 2008 Title 24 Building Energy Efficiency Standards is Time Dependent Valuation (TDV) Energy measured in KBtu/sf-yr. Process, receptacle and lighting loads in non-residential buildings are fixed in both the Standard Design and the Proposed Building within the performance calculation and as such, are considered unregulated energy use components.

A current study for PG&E by Gabel Associates concludes that there is no simple or consistent correlation between a building that meets California's 2008 Title 24 Building Energy Efficiency Standards and the extent to which it compares to the LEED baseline annual energy cost. To resolve this dilemma, Morgan Hill has allowed the Building Official to grant substitutions in meeting the requirement of the sustainable building rating systems. This would allow projects to reduce Title 24 TDV energy use by 10%-15% to meet the LEED energy requirement. **However, at no time does the ordinance allow a project to fail to meet the minimum requirements of the 2008 T24 standards.** This is the same approach used by the City of San Francisco, City of Palo Alto, and almost all other jurisdictions implementing green building ordinances under the 2008 Title 24 standards whereby 15% > Title 24 is considered equivalent to meeting the LEED 2009 energy prerequisite.

Energy Measures Needed to Exceed the 2008 Standards

The following energy efficiency features have been modified from the above Title 24 set of measures so that the proposed design uses 15% less TDV energy than the 2008 standards. The added first cost of each measure compared with the equivalent 2008 Title 24 design measure is listed to the right in the tables below, as well as the sum of all incremental costs.

(A1) 10,580 sf building: Reduction in 2008 T24 TDV Energy by 15%

• Lighting = 0.693 w/sf: 120 2-lamp 4' T8 fixtures with high efficiency instant start ballasts and premium T8 lamps, 50 input watts @$35.00 - $60.00/fixture	$ 4,200 - 7,200
• 30 (25% of) T8 fixtures on 15 occupant sensors, small offices: @$75.00 - $100.00 each	$ 1,125 - 1,500
• U=0.50, SHGCc=0.31 (e.g., Viracon VE 2-2M) 1,960 sf @$2.00 - 3.00/sq.ft.	$ 3,920 - 5,880
• R-30 cool roof Reflectance=0.70, Emmittance=0.75 10,580 sf @ $0.35 - $0.50/sf	$ 3,705 - 5,290
Total incremental cost of Ordinance energy measure:	**$ 12,950 - 19,870**
	Avg = $16,410
Incremental cost in $/SF:	**$ 1.22 to $1.88/sq.ft.**
	Avg = $1.55 /sf

(A2) 10,580 sf building: (Reduction in 2008 T24 TDV Energy by 10%

• Lighting = 0.693 w/sf: 120 2-lamp 4' T8 fixtures with high efficiency instant start ballasts and premium T8 lamps, 50 input watts @$35.00 - $60.00/fixture	$ 4,200 - 7,200
• (4) Global Energy Group 1400 Series 7.5-ton Packaged DX, EER = 13.0 @$1950 - $2450 each	$ 7,800 - 9,800
• R-30 cool roof Reflectance=0.70, Emmittance=0.75 10,580 sf @ $0.35 - $0.50/sf	$ 3,705 - 5,290
Total incremental cost of Ordinance energy measure:	**$ 15,705 - 22,290**
	Avg = $18,998
Incremental cost in $/SF:	**$ 1.48 to $2.11/sq.ft.**
	Avg = $1.80 /sf

The following measures were first evaluated so that the following non-residential prototype building just meets the 2008 standards as follows:

52,900 sf 5-story building, 29.1% Window Wall Ratio glazing area

(A) 52,900 sf 5-story office building which just meet Title 24:

- R-30 attic insulation, R-19 in metal frame exterior walls, slab-on-grade 1st floor;
- NFRC-rated Low-E windows: U-factor=0.50, SHGCc=0.38 (e.g., Viracon VE 1-2M) w/ 2' overhang on 1st floor only
- Lighting = 0.909 w/sf: 720 2-lamp 4' T8 fixtures w/ high efficiency ballasts @ 58w each and 230 26w CFLs @ 26 w each; no lighting controls
- 4 identical Packaged VAV units: Aaron 25 ton, EER=10.4, 10,000 CFM, standard efficiency fan motors, 30% VAV boxes w/ reheat
- Ducts in conditioned space, R-4.2 duct insulation
- Hot water assumed to be standard gas water heater or boiler

Energy Measures Needed to Exceed the 2008 Standards

The following energy efficiency features have been modified from the above Title 24 set of measures so that the proposed design uses 15% less TDV energy than the 2008 standards. The added first cost of each measure compared with the equivalent 2008
Title 24 design measure is listed to the right in the table below, and the sum of all incremental costs is listed.

(A1) 52,900 sf building: Reduction in 2008 T24 TDV Energy by 15%

• (5) Trane 25 ton units, EER=11.0 @ $9,000 to $13,000 each w/ premium fan motors	$ 45,000 - 65,000
• 10 NEMA Premium fan motors on supply & return fans	$ 750 - 1,250
• R-38 w/ Cool Roof 10,580 sf @ $0.40 - $0.50/sf	$ 4,235 - 5,290
• Installed LPD=0.785: 720 2-lamp 4' T8 fixtures w/ high eff. instant start ballasts and premium T8 lamps, 50w input @$10.00 - $20.00/fixture	$ 7,200 - 14,400
• Switch 20 (< 9%) of 26w CFLs to 18w CFLs	$ 0 - 0
• 100 occupant sensors controlling (2) 2-lamp T8 fixtures; @$75.00 - $100.00 each	$ 7,500 - 10,000
• R-21 in exterior walls: 20,730 sf @ $0.08 - $0.12/sf	$ 1,660 - 2,490
• U=0.50, SHGCc=0.31 (e.g., Viracon VE 2-2M) 8,500 sf @$2.00 - 3.00/sq.ft.	$ 17,000 - 25,500
Total incremental cost of Ordinance energy measure:	**$ 83,345 - 123,930**
	Avg = $103,638
Incremental cost in $/SF:	**$ 1.58 to $2.34/sq.ft.**
	Avg = $1.96 /sf

2.6 Renovations or Alterations of Existing Buildings

For renovations or alterations of residential buildings, the City's Sustainable Building Compliance Standards specify meeting the requirements of the Build it Green GreenPoint Rated program. The energy efficiency requirement for GreenPoint Rated for Existing Homes and Existing Multi-Family Buildings is normally achieved through the HERS 2 energy rating system. The cost-effectiveness of this requirement should be essentially self-evident for the following reasons:

Upgrades of lighting, plumbing or interior finishes are generally made in conjunction with upgrades in water heating, mechanical and, in many cases, improved insulation (if not windows). Including these sorts of changes in the proposed building will achieve an overall energy performance of 15% better than the Title 24 standard design without having to target additional measures to improve energy efficiency.

Incremental savings derived from upgrading the existing building conditions to the new energy measures will generally be much larger than the savings associated with the case study in Section 2.3 above. Therefore, the overall cost-effectiveness of complying with this section of the ordinance is likely to be substantially greater than for new construction.

The Ordinance is also designed to exempt small remodels and renovations entirely, require baseline improvements in medium sized remodels and renovations, and strategically ramp up

requirements as the scope of remodel and renovation projects increases. In this way, the Ordinance's requirements are aligned with a project's opportunity for compliance.

City staff is certified by the California Home Energy Efficiency Rating Services to conduct existing home energy audits and has conducted over 35 home energy audits in the past six months that included blower door and duct testing. Staff found that many of the homes, new and old, did not even meet the 2005 Title 24 energy efficiency standards based on entering information into Energy Pro software version 4.

The flexible energy measures in the GreenPoint Rated system allow cost effective measures to be implemented. For example, one home that was tested by city staff had 25% duct leakage. The cost to seal is estimated at $250 with an annual savings of $89. The simple payback would be three years. This is one action out of many that could satisfy the requirements of Morgan Hill's Sustainable Building Ordinance. Other optional points include, but are not limited to, upgrading insulation within the project scope, installing energy efficient lighting and appliances upgrades, and insulating hot water pipes.

The same findings can be made in renovations for nonresidential buildings. Many buildings can comply with the Ordinance by implementing the required number of improvements as a component of the renovation project. Lighting upgrades, water-efficient landscaping improvements, and building envelope upgrades are examples of cost effective options that could be chosen from the long menu of eligible measures. **The ordinance makes clear that at no time will a renovation or alteration fail to meet 2008 T24 energy requirements.**

3.0 Cost Effectiveness

The results summarized in this section are based upon the following assumptions:

- Incremental site electricity (kWh) and natural gas (therms) saved per year are calculated using the state-approved energy compliance software for the 2008 Building Energy Efficiency Standards, EnergyPro Version 5 and Micropas Version 8.

- Average utility rates of $0.14/kWh for electricity and $1.67/therm for natural gas in current constant dollars as provided by PG&E.

- No change (i.e., no inflation or deflation) of utility rates in constant dollars over time as per PG&E Company.

- No increase in summer temperatures, even though recent scientific studies suggest that global climate change will increase temperatures in the Western United States, which in turn will increase energy use associated with air conditioning.

The Simple Payback data includes a cost-effectiveness analysis of the City's ordinance with respect to each case study building design and assumes:

- No external cost of global climate change (and corresponding value of additional investment in energy efficiency and CO2 reduction) is included.
- The cost of money invested in the incremental cost of energy efficiency measures is not included.
- PG&E incentives and tax credits that may be applicable in some cases are not included.

3.1 New Single Family Homes

Building Description	Average Incremental First Cost ($)	Net Incremental Annual Energy Cost Savings ($)	Simple Payback (years)
1,705 sf (OptA-15%)	$1,915	$107	17.9
1,705 sf (OptB-15%)	$1,840	$110	16.7
Averages:	$1,877	$109	17.3

Annual Reduction in CO2-equivalent: 0.41 lbs./sq.ft.- year

Building Description	Average Incremental First Cost ($)	Net Incremental Annual Energy Cost Savings ($)	Simple Payback (years)
2,682 sf (OptA-15%)	$1,525	$165	9.2
2,682 sf (OptB-15%)	$2,686	$177	15.2
Averages:	$2,106	$171	12.2

Annual Reduction in CO2-equivalent: 0.41 lbs./sq.ft.- year

Building Description	Average Incremental First Cost ($)	Net Incremental Annual Energy Cost Savings ($)	Simple Payback (years)
5,074 sf (OptA-15%)	$4,314	$223	19.3
5,074 sf (OptB-15%)	$4,027	$218	18.5
Averages:	$4,170	$221	18.9

Annual Reduction in CO2-equivalent: 0.28 lbs./sq.ft.- year

3.2 Addition to Existing Homes

Building Description	Total Incremental First Cost ($)	Net Incremental Annual Energy Cost Savings ($)	Simple Payback (years)
1,295 sf Add (OptA -15%)	$635	$36	17.5
1,295 sf Add (OptB -15%)	$1,002	$41	24.4
Averages:	$818	$39	21.0

Annual Reduction in CO2-equivalent: 0.24 lbs./sq.ft.- year

3.3 Low-rise Multi-Family Residential Building

Building Description	Total Incremental First Cost ($)	Net Incremental Annual Energy Cost Savings ($)	Simple Payback (years)
8,442 sf (OptA-15%)	$10,953	$461	23.8
8,442 sf (OptB-15%)	$11,437	$454	25.2
Averages:	$11,195	$458	24.5

Annual Reduction in CO2-equivalent: 0.32 lbs./sq.ft.- year

3.4 High-rise Multi-Family Residential Building

Building Description	Average Incremental First Cost ($)	Net Incremental Annual Energy Cost Savings ($)	Simple Payback (years)
36,800 sf (Opt-A -15%)	$28,350	$2,106	13.5
36,800 sf (Opt-B -15%)	$29,860	$2,855	10.5
Averages:	$29,105	$2,481	12.0

Annual Reduction in CO2-equivalent: 0.32 lbs./sq.ft.- year

3.5 Non-residential Buildings

Building Description	Total Incremental First Cost ($)	Net Incremental Annual Energy Cost Savings ($)	Simple Payback (years)
10,580 sf (A1)	$7,013	$1,534	4.6
10,580 sf (A2)	$13,298	$1,638	8.1
Averages:	$10,155	$1,586	6.3

Annual Reduction in CO2-equivalent: 0.48 lbs./sq.ft.- year

Building Description	Total Incremental First Cost ($)	Net Incremental Annual Energy Cost Savings ($)	Simple Payback (years)
52,900 sf (A1)	$71,563	$6,781	10.6

Annual Reduction in CO2-equivalent: 0.38 lbs./sq.ft.- year

3.6 Conclusions

In considering the issue of energy cost-effectiveness, it's worth noting a few points, which put the above data in a slightly different context.

1. The first cost data for incremental (additional) energy measures is generally conservative since the average between a low-value and a high-value is used. Builders could focus on obtaining materials and equipment at the lower end costs which would reduce the simple paybacks.

2. No significant attempt was made in the case studies presented to optimize cost-effectiveness by performing multiple computer runs with different combinations of energy efficiency measures. That approach however, would likely be used for actual projects where reducing first costs to meet a specified energy performance level may be the driving force in the design process.

3. As noted in the above assumptions, the predicted rise in temperatures in California over the next 20 years from global climate change has not been included. Increased cooling loads due to rising temperatures will increase the energy savings for cooling system efficiencies and therefore also reduce simple paybacks.

Regardless of the individual building design, occupancy type and number of stories, it is reasonable to conclude that: (a) the paybacks are equal to or less than the useful life of the energy measures needed to meet the energy efficiency requirements of the City's ordinance; and (b) the incremental improvements in the overall annual energy performance of buildings required to meet the City's ordinance are cost-effective. However, each building's specific design, occupancy type and the design choices used to meet the State's energy efficiency standards, and exceed them to meet the requirements of the City's proposed ordinance, allow for a large range of incremental first costs and paybacks. As is the case in meeting the requirements of the State's Title 24 energy efficiency standards, a permit applicant complying with the energy requirements of Morgan Hill's Sustainable Building Ordinance should carefully analyze building energy performance to reduce incremental first cost and payback for the required additional energy efficiency measures.

4.0 Credit for Solar PV Systems

Under the LEED rating system, and after all energy standards requirements have been met, additional energy credit for on-site solar photovoltaic (PV) electricity generation is available. The ordinance defines the amount of credit for solar PV systems.

Note: The Ordinance makes clear that any building must meet the 2008 Building Energy Efficiency Standards without PV credit.

5.0 Implementation Plan

The implementation of the Ordinance's energy requirements for residential buildings is a simple verification that the performance CF-1R for low-rise residential buildings or the PERF-1 for high-rise residential buildings shows that the proposed building exceeds Title 24 standards by at least 15%. If the building is to receive additional energy points under GreenPoint Rated (GPR) beyond the minimum 30 points, then the amount by which the building exceeds the standards is specified.

If a residential solar PV system is to receive a separate credit under GreenPoint Rated, the additional CF-1R-PV form must also be included.

For nonresidential buildings, only LEED requirements apply. The Ordinance also grants authority to the Sustainable Building Official to approve an "alternative equivalent method" to meet the LEED minimum energy performance requirements.

The City of Morgan Hill plan review will involve:

a. Verifying the occupancy type(s) and scope of work to determine whether and how the Ordinance applies;

b. Checking the drawings, specifications and regular Title 24 documentation under the ***2008*** Building Energy Efficiency Standards; and,

c. Checking any additional special compliance forms needed to demonstrate compliance with the Ordinance.

Field inspection will be essentially identical to working with the current standards, with the inclusion of the possible inspection of a solar PV system.

City staff has received GreenPoint Rater training and will be receiving LEED training and/or consulting assistance before ordinance implementation including, if requested, training for local energy consultants and interested parties (e.g., designers and builders) who would like to learn more about how to meet the ordinance's energy requirements.

6.0 Text of the Morgan Hill Ordinance

ORDINANCE NO. 1953, NEW SERIES

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORGAN HILL AMENDING TITLE 15 (BUILDING AND CONSTRUCTION) OF THE MORGAN HILL MUNICIPAL CODE TO ADD A NEW CHAPTER 15.65 (SUSTAINABLE BUILDING REGULATIONS)

WHEREAS, the City of Morgan Hill's Environmental Agenda sets forth goals for preserving and improving the City's natural and built environment, protecting the health of its residents and visitors, conserving water and energy, and fostering its local economy; and

WHEREAS, the City Council of the City of Morgan Hill has identified green building as a key goal in the Environmental Agenda; and

WHEREAS, green building design, construction, restoration, operation and maintenance can have a significant positive effect on energy, water, and resource conservation, waste management and pollution generation, and the health and productivity of a property's residents, workers, and visitors over the life of the building and/or site; and

WHEREAS, the City Council has implemented the voluntary phase for sustainable building practices recommended by the Santa Clara County Cities Association (SCCCA) since January 1, 2008 and will proceed to phase two of the SCCCA's recommendation to adopt minimum mandatory requirements for new and existing buildings; and

WHEREAS, sustainable building regulations comprise an important component of a whole systems approach to the City's sustainability program related to buildings and land development, other components of which include but are not limited to requirements for; water and energy conservation, community greenhouse gas reductions, transportation demand management, community health and habitat conservation.

The City Council of the City of Morgan Hill does ORDAIN as follows:

SECTION 1. Findings. The City Council finds that:

A. The City's Environmental Agenda adopted by the City Council on September 19, 2007, identifies the use of laws and regulations to foster green building practices in the community; and

B. The City's 2008 Environmental Indicator Report states that natural gas and electricity use within the City accounts for 121,973 tons of greenhouse gas emissions (GHG) annually,

or 31% of the total annual City wide emissions and the community's GHG emissions from electricity; and

C. The Environmental Indicator Report revealed an increase in community GHG emissions because of PG&E's decreased ability to tap into renewable hydroelectric power due to the statewide drought ; and

D. The provisions of California Assembly Bill 32 (Global Warming Solutions Act) require actions on the part of State and local governments to significantly reduce greenhouse gas (GHG) emissions such that statewide GHG emissions are lowered to 1990 levels in 2020 and 80% below 1990 levels in 2050; and

E. Local government, by itself, cannot fully address all of the challenges posed by climate change and comply with the mandates of AB 32; and

F. Sustainable building is a key component in reducing GHG emissions because buildings are required to more energy efficient, and construction of more energy efficient buildings can help Morgan Hill reduce its share of the GHG emissions that contribute to climate change; and

G. At the national and state levels, the U.S. Green Building Council has taken the lead in promoting and defining commercial green building by developing the Leadership in Energy and Environmental Design (LEED) Rating System; and

H. At the state level, Build It Green has taken the lead in promoting and defining residential green building by developing the GreenPoint Rated Rating System; and

I. The City recognizes the sustainability building checklist provided by Build It Green and U.S. Green Building Council as the official tool for achieving increased energy efficiency, water and resource conservation, and healthier indoor air quality in buildings; and

J. California Health and Safety Code Sections 18938 and 17958 provide that the California Building Standards Code establishes building standards for all occupancies throughout the State; and

K. Health and Safety Code Section 17958.5 provides that a city may establish more restrictive building standards if they are reasonably necessary due to local climatic, geological or topographical conditions; and

L. Based on the findings contained in this Ordinance, the City Council has found that certain modifications and additions to the California Building Standards Code are reasonably necessary based upon local climatic, topographical and geological conditions; and

M. California Public Resource Code Section 25402.1(h)(2) authorizes a city to adopt and enforce increased energy efficiency standards, provided that a determination is made that the local standards are cost effective and they are approved by the California Energy Commission; and

N. The City is using an energy study that was prepared for the City of Palo Alto by Gabel Associates, LLC, an expert in the field of building energy analysis and Energy Code compliance, for local amendments to the 2005 California Energy Code as Palo Alto is located within the same geographic and climate zone (zone 4) as Morgan Hill and has incorporated similar sustainable building standards; and

O. The Gabel Associates study did demonstrate the cost effectiveness of these local amendments; and

P. The City will include the Gabel Associates study in an application for consideration by the California Energy Commission in compliance with Public Resources Code 25402.1(h)(2); and

Q. It is the purpose and intent of this Ordinance to amend the Standards as described herein; and

R. City staff has prepared a new Chapter 15.65 to Title 15 of the Morgan Hill Municipal Code, Sustainable Building Regulations; and

S. The modifications to the 2005 California Building Energy Efficiency Standards required by this Ordinance are reasonably necessary due to local climatic, geologic and topographic conditions, specifically:

   a. Summer ambient temperatures in the City during the months of June, July and August can reach over 100 degrees, creating peak energy load demands that can cause power outages, affecting public safety and causing adverse local economic impacts.
   b. The total square footage of conditioned habitable space within residential and nonresidential buildings in the City is increasing and using more energy and resources than in the past.
   c. The burning of fossil fuels used in the generation of electric power and heating of buildings contributes to climate change, which could result increased temperatures in the City, that could put Morgan Hill homes and businesses at risk for increased water shortages, wildfires and other public health and safety hazards.
   d. Reduction of total and peak energy use as a result of incremental energy efficiency measures required by this Ordinance will have local and regional benefits in the cost-effective reduction of energy costs for building owners,

additional available system energy capacity, and a reduction in greenhouse gas emissions; and

T. The study conducted by Gabel Associates, LLC has concluded that the energy efficiency standards contained in this Ordinance are cost-effective. The City Council hereby adopts as the basis of its findings the conclusions of the study and authorizes the filing the ordinance with the California Energy commission in compliance with Public Resources Code 25402.1(h) (2). This Ordinance shall be enforceable subject to the requirements set forth in such state code; and

U. Nothing in this ordinance is intended to duplicate, contradict, or infringe upon provisions of state law, including the California Building Standards Code. The ordinance and the associated checklist provide many opportunities to achieve required points and credits that do not impact areas where state law has established building standards; and

V. On June 8th and 18th of 2009, a public workshop was held to provide comments and recommendations regarding the sustainable building ordinance; and

W. On June 23rd, 2009, the Planning Commission held a duly noticed presentation regarding the sustainable building ordinance where City staff received feedback from the pubic and Commissioners.

SECTION 2. Amendment. Chapter 15.65 of Title 15, "Building and Construction," is hereby added to the Morgan Hill Municipal Code to read and provide as follows:

Chapter 15.65
Sustainable Building Regulations

15.65.010 Purpose

The purpose of this chapter is to assure that commercial and residential development is consistent with the City's Environmental Agenda and General Plan Conservation policies 7a and

7b to create a more sustainable community by incorporating sustainable building measures into the design, construction and maintenance of new and existing buildings. The sustainable building provisions referenced in this chapter are designed to achieve the following objectives:

a. Increase energy efficiency in buildings
b. Encourage water and resource conservation
c. Reduce waste generated by construction projects
d. Provide durable buildings that are efficient and economical to own and operate
e. Promote healthy and productive indoor environments for residents, workers and visitors to the city
f. Recognize and conserve the energy embodied in existing buildings.

15.65.015 Definitions

For the purposes of this chapter, the following terms, phrases, words and their derivations have the meaning given in this section:

A. "Addition" means newly constructed square footage that is added to an existing structure.

B. "Applicable Project" means any building permit application(s) for new commercial construction, additions or renovations; or for any new residential construction, additions or renovations subject to the Minimum Standards for Compliance as outlined in this Chapter.

C. "Applicant" refers to any individual, firm, limited liability company, association, partnership, political subdivision, government agency, municipality, industry, public or private corporation or any other entity that applies to the City for building permits to undertake any construction or renovation project within the City.

D. "Build It Green (BIG)" refers to the GreenPoint Rating System designed for residential developments by Build It Green.

E. California Building Energy Efficiency Standard (Title 24, part 6) refers to the most recent enforced version of the coded section of the California Building Code.

F. "City" means the City of Morgan Hill.

G. "Commercial Project" means any project, other than a City sponsored project, that is not residential.

H. "Conditioned Buildings" means conditioned space that is heated or cooled

I. "Good Faith Effort to Comply" means a project that is subject to the requirements of this Chapter has not met the required sustainability standard, but for extenuating reasons or reasons beyond the control of the applicant, the Sustainable Building Compliance Official

has found that the project meets the standards of Good Faith Effort to Comply pursuant to the Compliance Section outlined in this Chapter.

J. "GreenPoint Rated" refers to the sustainable building rating system for residential development that was developed by the Build It Green organization.

K. "Internal GreenPoint Rated Verification" means verification of compliance of an applicable project by certified GreenPoint Raters, which can be qualified city staff or other qualified professionals retained by the City.

L. "Internal LEED AP Verification" means verification of compliance of an applicable project by City staff or other qualified professionals retained by the City with LEED AP certification and/or training.

M. "LEED®" means the "Leadership in Energy and Environmental Design" rating system developed by the U.S. Green Building Council.

N. "LEED Accredited Professional (AP)" means an architect, designer, engineer, contractor and/or City staff that is certified through the U.S. Green Building Council to design, review plans, and inspect projects for compliance with the LEED rating system.

O. "LEED®/USGBC Verification" means verification by the LEED AP project architect and/or LEED AP and results in LEED certification of the project by the U.S. Green Building Council (USGBC.)

P. "Mixed use" means a building that includes both commercial and residential uses within the same building envelope.

Q. "Multi-family residential" means a building envelope that contains four (4) or more attached dwelling units; or attached residential units that share electrical, mechanical, and/or water service; or attached units that share enclosed common space, such as hallways for condominiums.

R. "New construction, commercial (nonresidential)" means the construction of new or replacement retail, office, industrial, warehouse, service, or similar building(s), or additions to such building(s).

S. "New construction, residential" means the construction of a new or replacement single-family, including secondary dwelling units, or of new or replacement multi-family residential building(s) or additions to such building(s).\

T. "Non-conditioned Buildings" means space that is not heated or cooled.

U. "Permit valuation" refers to the cost for construction of new buildings, additions and/or renovations as determined by the Building Official. Valuations are subject to change based on the annual Consumer Price Index (CPI) for new construction.

V. "Qualified Sustainable Building Professional" means a person trained through the USGBC as a LEED accredited professional or through Build It Green as a certified GreenPoint rater, who can design, review plans, and inspect applicable projects for compliance with the sustainability standards outlined in the Minimum Standards for Compliance provisions of this Chapter.

W. "Renovation" means any rehabilitation, repair, remodeling, change, or modification to an existing building, where changes to floor area and the footprint of the building are negligible. The permit valuation of renovation improvements shall be determined by the Building Official. The Sustainable Building Compliance Official may exclude from such valuation the cost of (a) seismic upgrades, (b) accessibility upgrades, (c) photovoltaic panels or other renewable energy source (d) heritage buildings, (e) fire, flood, wind, earthquake, or other natural disaster damage repairs (f) swimming pools, or (g) temporary structures. Renovation valuation thresholds identified in the Minimum Standards for Compliance shall be adjusted annually to reflect changes in the City's valuation per square foot for new construction in Morgan Hill, using valuations based on the annual Consumer Price Index (CPI.)

X. "Renewable energy" means derived from resources that are naturally regenerative or practically inexhaustible, such as geothermal, solar, thermal gradient and wind energy.

Y. "Scope of Work" means all construction work that is being undertaken for a project that requires building permits.

Z. "Sustainable (green) building" means a whole systems approach to the design, construction and operation of buildings in a manner that substantially mitigates the environmental, economic, and social impacts of buildings. Sustainable building practices recognize the relationship between the natural and built environments and seek to minimize the use of energy, water and other natural resources and provide for a healthy, productive indoor environment.

AA. "Sustainable Building Compliance Official (SBCO)" means the Building Official or his or her designee that is certified as a LEED AP and a GreenPoint rater or is experienced with sustainable building principles.

BB. "Sustainable building project checklist" refers to the Build It Green or LEED® checklists used to calculate a sustainability rating for commercial and residential development.

CC. "Sustainability Standard" means the minimum number of points or rating level that must be attained for a particular applicable project, as outlined in the Minimum Standards for Compliance of this Chapter.

15.65.020 Applicability

This Chapter applies to any building permit application(s) for new commercial and mixed use construction, additions or renovations; or for any new residential construction, additions or renovations subject to the Minimum Standards for Compliance as outlined in Section 15.65.30 of this Chapter.

This Chapter shall not apply to any project for which a planning entitlement application has been granted (excluding sustainable checklists used at the time of Residential Development Control System allotment commitments); or a building permit application that has been submitted prior to the effective date of this ordinance; or to permits that are solely for grading, retaining walls, or publicly owned utility structures such as wells and booster stations.

For additions, remodels or tenant improvements, the Sustainable Building Compliance Official excludes the following from the valuation cost:

- seismic upgrades
- accessibility upgrades
- photovoltaic panels or other renewable energy source
- heritage buildings
- fire, flood, wind, earthquake, or other natural disaster damage repairs
- swimming pools
- temporary structures

Renovation valuation thresholds identified in the Minimum Standards for Compliance shall be adjusted annually to reflect changes in the City's valuation per square foot for new construction in Morgan Hill, using valuations based on the annual Consumer Price Index (CPI.)

15.65.30 Minimum Standard for Compliance

All projects subject to this chapter shall be constructed using the current guidelines, sustainable building rating systems and sustainable project checklist outlined in Tables 1, 2 and 3 below upon applying for a building permit, unless another version of the checklist was previously approved by a planning entitlement (excluding checklist used at the time of Residential Development Control System allotment commitments.) Failure to comply with any of the terms of this Chapter shall subject the applicant of the applicable project to a full range of enforcement mechanisms set forth in Compliance Section 15.65.050 of this Chapter.

All projects must, at minimum, demonstrate compliance with the California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code

Compliance with the provisions of this chapter shall be listed as a condition of approval on any design review approval issued by the City for a project to require the project to meet the Minimum Standards for Compliance thresholds identified in this Section.

A. New Residential Construction and Renovation: Residential development involving new construction shall use either the most current Build It Green (BIG) or LEED® for Homes rating system when applying for a building permit unless another version of the checklist was previously approved through a planning entitlement (excluding a checklist that was used at the time of Residential Development Control System allotment commitments) and shall meet the sustainability standard and verification method outlined in Table 1 below. Applicants are encouraged to certify their projects with Build It Green or the U.S. Green Building Council.

If a project consists of an addition and a remodel, the higher minimum standard shall apply. Projects must meet the minimum category points in Energy, Water, Resource and Indoor Air Quality within the BIG checklist or any other required points in the LEED or Build It Green's checklist. Community points from Build It Green's checklist are excluded from the minimum sustainability standard.

The Build It Green Multi-family checklist shall only be used when:

1. The attached units share mechanical or electrical features; or
2. Attached units share enclosed common space, such as hallways for condominiums; or
3. There are four (4) or more attached units or single-family dwelling units within the building envelope

Table 1: Sustainable Residential Development Standards

Applicable Project			
Residential, New Construction	**Minimum Sustainability Standard**		**Party Verification**
New Single Family or Multi-Family Developments	**≤ 2,000 sf per unit** 70 BIG points* or LEED® Certified	**> 2,000 sf per unit** 70 BIG points + 1 point per additional 70 sf (150 point maximum)* If using the LEED® rating system, must obtain LEED® Silver Certification	Internal GreenPoint Rated Verification for BIG checklist or Internal LEED ®AP Verification for LEED® checklist
Residential, New Construction Additions	**Minimum Sustainability Standard**	**Verification**	
Addition < 250 square feet	Not Applicable		
Addition ≥ 250 square feet	25 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	
Addition ≥ 700 square feet	50 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	
Renovations and Remodels			
Permit valuation < $100,000	Not Applicable		
Permit valuation** ≥ $100,000	25 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	
Permit valuation** ≥ $250,000	50 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	

Note: All projects must, at minimum, demonstrate compliance with the California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code.

*Community points in Build It Green's checklist are excluded from the sustainability standard and the project is required to meet minimum point requirements within the checklist categories (energy, water, resource, and indoor air quality.)

** Valuations are subject to change based on the annual Consumer Price Index (CPI) for new construction or other adopted valuation method adopted by the City of Morgan Hill

D. New Commercial Construction and Renovation: Commercial development involving new construction shall use the most current version of the LEED® rating system and meet the sustainability standard for applicable projects outlined in Table 2 below. If a project consists of a remodel and an addition, the project shall use the highest minimum standard that would apply to the applicable project. Applicants are encouraged to apply for LEED® certification through the U.S. Green Building Council.

Table 2: Sustainable Commercial Development Standards

Applicable Project Type	**Sustainability Standard**	**Verification**
Commercial, New Construction and Additions		
Additions < 1,000 square feet	Not Applicable	
New/Additions Construction ≥ 1,000 square feet	16 LEED® Points	Internal LEED® AP Verification
New/ Additions ≥ 5,000 square feet	LEED® Silver	
Commercial, Renovations/Tenant Improvements		
Permit valuation < $350,000	Not Applicable	
Small, renovations** ≥ $350,000 permit valuation	10 LEED® Points	Internal LEED® AP Verification
Medium, renovations** ≥ $500,000 permit valuation	LEED® Certified	
Large, renovations** ≥ $1,500,000	LEED® Silver	
Note: All projects must, at minimum, demonstrate compliance with the California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code. ** Valuations are subject to change based on the annual Consumer Price Index (CPI) for new construction or other adopted valuation method adopted by the City of Morgan Hill.		

E. New Mixed Use Construction and Renovation: Mixed use development involving new construction shall use the most current version of the LEED® or Build It Green rating system and meet the sustainability standard for applicable projects outlined in Table 3 below. If a project consists of a remodel and an addition, the project shall use the highest minimum standard that would apply to the applicable project. Applicants are encouraged to apply for LEED certification through the U.S. Green Building Council.

Table 3: Mixed Use Development Thresholds and Standards

Applicable Project Type	**Standard**	Verification
Mixed Use, New Construction		
New ≤ 10,000 square feet	The project shall comply with residential minimum sustainability standards for the residential portion of the development; and For the commercial portion, the development shall be required to: o Exceed California Title 24 energy requirements by 10-15% o Provide a built-in recycling center per LEED standards in an easily accessible location, such as the kitchen facility o Use LEED® approved renewable or 10 to 20 percent recycled content carpeting and/or flooring to the extent that is it is included within the project's scope of work. o Use LEED® approved low VOC adhesives, paints, flooring, and furnishings to the extent that it is included within the project's scope of work.	Internal GreenPoint rated verification and/or LEED® AP Verification
New ≥ 10,000 square feet	Same standards apply as in Mixed Use New Construction ≤ 10,000. In addition, the development shall provide bicycle storage and a changing room facility that includes shower(s.) The changing room can be in the restroom instead of a separate room.	
Mixed Use, Additions, Tennant Improvements and Remodels	For additions and remodels, only that component of the project triggering compliance with the minimum standards for compliance in Tables 1 or 2 shall apply. If the project is a major renovation of both residential and commercial components, the applicant shall be allowed to use standards for New Mixed Use buildings.	
Note: All projects must, at minimum, demonstrate compliance with the California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code.		

15.65.35 Incentives for Compliance for Renovations and Additions

A. For commercial renovations and new additions: A LEED verification shall not be required for commercial renovation and addition projects defined in Table 2 of the Minimum Standards for Compliance that install a renewable energy system that supplies over 60% of the energy use for the building. The applicant shall provide the Building Division with documentation detailing the current and/or expected energy use of the building and the amount of energy the renewable energy system will provide before issuance of a building permit. A final sign off on the building permit shall not be provided until the renewable energy system has been installed. If the applicant fails to install the system, the applicant shall be subject to the full range of enforcement mechanisms set forth in this Chapter. Existing photovoltaic systems that provide 60% of the energy use for the building are not eligible to apply for this incentive**.**

B. For residential renovations and additions: A BIG verification shall not be required for residential renovation and addition projects defined in Table 1 of the Minimum Standards for Compliance that:

1. Install a renewable energy system that supplies over 60% of the energy use for the building. The applicant shall provide the Building Division with documentation detailing the current and/or expected energy use of the building and the amount of energy the renewable energy system will provide before issuance of a building permit. A final sign off on the building permit shall not be provided until the renewable energy system is installed. If the applicant fails to install the system, the applicant shall be subject to the full range of enforcement mechanisms set forth in this Chapter; or

2. Install a solar water heating system. The applicant shall provide the Building Division with documentation of the type and model of the current water heater and the amount of energy the solar water heater will provide before issuance of a building permit. Building inspection staff shall verify the existing water heater is not a solar water heater. A final sign off on the building permit shall not be provided until the renewable energy system is installed. If the applicant fails to install the system, the applicant shall be subject to the full range of enforcement mechanisms set forth in this Chapter.

15.65.40 Submission of Documentation

A. Design Review Documentation: In conjunction with an application for a Design Review permit, the applicant shall submit a letter of acknowledgement indicating that the applicable project will achieve the sustainability standards defined in this Chapter. The letter shall also indicate how many points the applicable project will achieve in each category and/or level of LEED certification, and shall include the contact information of the potential qualified sustainable building professional that will ensure that the plans

meet the sustainability standards outlined in this Chapter. The letter shall also commit to compliance with the California Building Energy Efficiency Standards (Title 24, part 6).

B. Building Permit Documentation: Upon submittal of an application for a building permit, any applicable project shall include the most current sustainable building project checklist unless another version of the checklist was previously approved by a planning entitlement (excluding sustainable checklists used at the time of Residential Control Development System allotment commitment). The application must also contain all necessary documentation to clearly demonstrate compliance with the California Building Energy Efficiency Standard (Title 24, part 6).

   If the project requires plans, the sustainable project checklist shall be incorporated with the building plans on a separate plan sheet and shall indicate in the general notes or individual detail drawings the measures to be used to attain the sustainability standards defined in this Chapter and the California Building Energy Efficiency Standard (Title 24, part 6), reflecting any changes proposed since the planning entitlement phase (if a planning entitlement was required.)

   Applicants are encouraged to consult with a qualified sustainable building professional before submitting plans and/or applying for a building permit.

15.65.45 Review of Documentation

A. Approval: Prior to the issuance of a building permit, the Building Division shall certify with an approval letter that the project meets the Minimum Standards for Compliance (or meets point level allowed under the Exceptions provisions of this Chapter) and that the plans (if submitted) reflect the points in the sustainable building project checklist. No building permit shall be issued until the permitting documentation has been approved under this section or unless an exemption has been granted under the Hardship and Infeasibility section of this Chapter.

B. Non-approval: If the Building Division determines that the permitting documentation is incomplete or fails to indicate that the applicable project will meet the Minimum Standards of Compliance in this Chapter, the Building Division shall either:

   1. Return the permitting documentation to the applicant marked "Denied," including a statement of reasons for the denial; or

   2. Return the permitting documentation to the applicant marked "Further Explanation Required" and detail the additional information needed.

C. Resubmission: If the permitting documentation is returned to the applicant, the applicant may re-submit the permitting documentation with additional information as may be

required or may apply for an exemption under Section Hardship and Infeasibility section of this Chapter.

15.65.50 Compliance

A. Building Inspections, Verification and Occupancy: The Building Division inspection staff or other qualified professionals retained by the City shall verify that the sustainable building measures indicated in the approved permitting documentation are being implemented at the foundation inspection, framing inspection, or other as needed inspections, and prior to final inspection/issuance of a certificate of occupancy.

Throughout each inspection stage, the applicant shall be required to provide evidence of compliance to the Building Division to satisfy the requirements of the Minimum Standards for Compliance in this Chapter. This information shall include, but is not limited to:

1. Any documentation that would be required by the California Building Energy Efficiency Standard (Title 24, part 6) and the LEED or the GreenPoint rated system for certification. The applicant may be required to provide supporting information from qualified professionals (e.g. civil engineer, electrical engineer, Title 24 consultant, commissioning agent, etc.) to certify compliance with each point on the checklist.

   Applicants with projects that are registered with the U.S. Green Building Council are encouraged to submit proof of registration and provide online access to the U.S. Green Building Council's website to the Building Division in order to easily monitor the documentation submittals by the applicant;

2. Documentation that verifies incorporation of the design and construction related credits specified in the project approval;

3. Any additional information that the applicant believes is relevant to determining that a good faith effort has been made to comply with this Chapter.

B. Substitution of Credits: During the compliance review, flexibility may be exercised by the Sustainable Building Compliance Officer to substitute approved points with other points in the LEED® and GreenPoint rating systems. Substitution shall occur only at the request of the applicant. Any substitution credits shall not result in reduced minimum category point requirements within a sustainable building project checklist or required points established in a development agreement. The Sustainable Building Compliance Officer may at no time approve a project that fails to comply with the California Building Energy Efficiency Standard (Title 24, part 6).

C. Non-Compliance: If, as a result of any inspection, the Building Division determines that the project does not or is unlikely to comply with the sustainability measures in the approved permitting documentation and/or plans, a stop-work order may be issued if the Sustainable Building Compliance Official determines that continuation of construction activities will jeopardize the project's ability to meet the required sustainability standard. The stop-work order shall remain in effect until the Sustainable Building Compliance Official determines that the project will be brought into compliance with the approved permitting documentation and this Chapter.

D. Final Determination of Compliance: Prior to the scheduling of a final building inspection for an applicable project, the Building Division shall review all documentation submitted by the applicant and determine that the project has demonstrated compliance with the California Building Energy Efficiency Standard (Title 24, part 6) and whether the applicant has achieved the Minimum Standards for Compliance set forth in this chapter; or demonstrates that measures are in place to assure compliance not later than one year after approval of the final building inspection; or the applicant has made a good faith effort, as defined below, to comply.

If the Building Division determines that the applicant has met the minimum requirements of this Chapter for the project, the final building inspection may proceed, provided the project has received approval of all other inspections required by the Building Official. If the Building Division determines that the required sustainability standard has not been achieved based on the provisions of this Chapter, the Sustainable Building Compliance Official shall find one of the following:

1. Good Faith Effort to Comply: At a minimum, all aspects of the proposed project must comply with the California Building Energy Efficiency Standard (Title 24, part 6). An applicant must submit a written request to the Sustainable Building Official for approval of a Good Faith Effort to Comply. The granting or denial of the Good Faith Effort to Comply shall be provided to the applicant in writing within thirty (30) days of the applicant's written request by the Sustainable Building Compliance Official. If a Good Faith Effort to Comply is granted, the final building inspection may proceed.

   Determination of a Good Faith Effort to Comply shall be made separately for each incomplete item on the sustainable building project checklist. Granting of a Good Faith Effort to Comply does not preclude the need for the applicant to comply with the other items on the sustainable building checklist, such as meeting minimum category point requirements within the checklist. However, the Sustainable Building Compliance Official shall, at minimum, verify that the project as a whole will still demonstrate compliance with the California Building Energy Efficiency Standard (Title 24, part 6) assuming all incomplete items are never completed.

The Sustainable Building Compliance Official shall determine that the applicant has made a good faith effort to comply with this Chapter when finding that at least ninety percent (90%) of the required sustainability credits have been achieved and either:

i. Measures are in place to assure full compliance not later than one year after approval of the final building inspection; or

ii. The incomplete measures involve sustainable building materials and technologies that are no longer available or not yet commercially available, and the applicant will comply by incorporating other measures not later than one year after approval of the final building inspection; or

iii. The cost for the incomplete sustainable building measure or documentation is disproportionate to the overall cost of the project, and the applicant will comply by incorporating other measures on the checklist not later than one year after approval of the final building inspection. That is, the cost for the sustainability measure or documentation exceeds three (3) percent of the total cost of construction. The Building Division shall verify the construction costs. The applicant shall be responsible for providing documentation, such as, but not limited to, invoices and estimates from at least three (3) separate sources, to support their positions.

The applicant shall submit evidence that the sustainability measure(s) will be in compliance not later than one year after approval of the final building inspection and may be required to submit a deposit/bond to the Building Division. The Sustainable Building Compliance Official will determine the amount of deposit/bond required based on the cost of the sustainability measure(s.)

The applicant shall be responsible for submitting documentation or contacting the Building Division for an inspection when the sustainable building measure(s) is in place within one year of the date of final inspection approval. If the applicant complies within the one year timeframe, the deposit/bond shall be released in full to the applicant. If the applicant fails to complete measures within the allotted timeframe, the deposit shall be used to enhance the City's sustainable building program.

2. Non-Compliant Project: If the Sustainable Building Compliance Official determines that the applicant has not made a good faith effort to comply with this chapter or if the applicant fails to submit the necessary documentation within the required time period for associated inspections and plan reviews, or if the Sustainable Building Compliance Official determines that the project will not comply with the California Building Energy Efficiency Standard (Title 24, part 6), then the project shall be deemed non-compliant. The final inspection and approval for the project shall be withheld. A final inspection shall not take place

until the applicant has implemented equivalent alternate measures approved by the Sustainable Building Compliance Official; or the applicant has been granted an exception under the provisions of this Chapter.

E. The Sustainable Building Compliance Official shall have the responsibility to administer and monitor compliance with the sustainable building requirements set forth in this chapter and to grant Good Faith Efforts to Comply, Exceptions and Exemptions from the requirements, where so authorized.

F. Compliance with the provisions of this chapter shall be listed as a condition of approval on any Design Review Permit or other discretionary permit approval, and on the building plans for building permit approval for any applicable project.

15.65.55 Exceptions

If an applicant believes circumstances exist that make it a hardship and/or not feasible to complete up to ten (10) percent of the required points defined in the Minimum Standards for Compliance Section of this Chapter and the applicant can demonstrate to the Sustainable Building Compliance Official that the project will comply with the California Building Energy Efficiency Standard (Title 24, part 6) without these points, then the Sustainable Building Compliance Official may authorize a maximum of ten (10) percent of the required points to be waived based on one of the following findings:

1. There is a lack of commercially available sustainable building materials and technologies to comply with the project's scope of work; or

2. The project's scope of work does not allow for enough sustainable checklist points without interfering with other areas outside the project's scope of work.

3. The cost to utilize sustainable building practices, technologies and/or provide documentation exceeds three (3) percent of the project's construction cost. The project's construction costs shall be verified by Building Division staff. The applicant may be required to provide evidence to the Building Division, such as but not limited to, invoices and estimates from three (3) different sources for each sustainable building measure(s) that the applicant believes is contributing to over 3% of the construction cost. The applicant is still required to obtain points that would equate up to 3% of the total construction costs.

The applicant must apply in writing to the Sustainable Building Compliance Official for an exception and shall indicate the circumstances that create a hardship or make it infeasible to fully comply with this Chapter. Determination of exception shall be made separately for each item on the sustainable building project checklist that the exemption applies to. Granting of an exception to comply for one or more items does not preclude the need for the applicant to meet required and minimum category point requirements within the checklist. As necessary, projects that are

subject to development agreements shall apply for a development agreement amendment to modify the project's sustainability commitments. At no time shall an exception be granted which may cause a proposed or permitted project to fail to comply with the California Building Energy Efficiency Standard (Title 24, part 6).

The decision of the Sustainable Building Compliance Official shall be provided to the applicant in writing within thirty (30) days of applicant's written request. If an exception is granted, the applicant shall be required to comply with this chapter in all other respects.

If the Sustainable Building Compliance Official determines that it is reasonably possible for the applicant to fully meet the requirements of this chapter or that granting a specific exception might result in a failure to comply with the California Building Energy Efficiency Standard (Title 24, part 6), the request shall be denied and the Sustainable Building Compliance Official shall notify the applicant in writing within thirty (30) days of the applicant's written request. The project and compliance documentation shall be modified to comply with this chapter prior to further review of any pending planning or building application.

15.65.60 Hardship or Infeasibility Exemption

At the time of applying for a building permit, if an applicant believes that circumstances exist that make it a hardship or infeasible to meet the requirements of this Chapter, the applicant may request in writing to the Sustainable Building Compliance Official an exemption of one or more items on the sustainable building project checklist. The applicant shall indicate the maximum threshold of compliance that is feasible for the project; and circumstances that create a hardship or make it infeasible to fully comply with this Chapter. As necessary, projects that are subject to a development agreement shall apply for an amendment to modify the project's sustainability standards**.** The Sustainable Building Official shall have the authority to grant or deny an exemption based on one of the following, however, at no time shall an exemption be granted which may cause a proposed or permitted project to fail to comply with the California Building Energy Efficiency Standard (Title 24, part 6):

1. There are not enough sustainable building measures available within the sustainable building project checklist that are compatible with the project's scope of work; or

2. There is a lack of commercially available sustainable building materials and technologies to comply within the project's scope of work; or

3. The project is or within a non-conditioned building. Non-conditioned spaces that are attached to condition spaces are not eligible to apply under this finding; or

The decision of the Sustainable Building Compliance Official shall be provided to the applicant in writing within thirty (30) days of applicant's written request.

Granting of Exemption: If the Sustainable Building Compliance Official determines that it is a hardship or is infeasible for the applicant to fully meet the requirements of this chapter based on the information provided, the Sustainable Building Compliance Official shall determine the maximum feasible threshold of compliance reasonably achievable for the project which complies with the California Building Energy Efficiency Standard (Title 24, part 6). If an exemption is granted, the applicant shall be required to comply with this chapter in all other respects and shall be required to achieve the threshold of compliance determined to be achievable by the Sustainable Building Compliance Official.

Denial of Exemption: If the Sustainable Building Compliance Official determines that it is reasonably possible for the applicant to fully meet the requirements of this chapter or that granting the requested exemption would potentially cause the project to fail to comply with the California Building Energy Efficiency Standard (Title 24, part 6), the request shall be denied. The project and compliance documentation shall be modified to comply with this chapter prior to further review of any pending planning or building application.

15.65.70 Appeal

A. Any aggrieved applicant or person may appeal the determination of the Sustainable Building Compliance Official regarding: (1) the granting or denial of an exemption pursuant to the Hardship and Infeasibility section of this Chapter; or (2) the granting or denial of a Good Faith Effort to Comply pursuant to this Chapter; or (3) the granting or denial of Exceptions pursuant to this Chapter to the Community Development Director.

   Any appeal must be filed in writing with the Community Development Department not later than fourteen (14) days after the date of the determination by the Sustainable Building Compliance Official. The appeal shall state the alleged error or reason for the appeal.

   The appeal shall be processed and considered by the Community Development Director in accordance with Appendix B of the 2007 California Building Code.

   The applicant may NOT appeal any provision required by the 2008 California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code.

15.65.75 Violation

Violation of any provision of this chapter due to the applicant's failure to plan or build the project in accordance with the terms of this Chapter shall be punishable as a misdemeanor defined in Chapter 15 Section 15.08.220 of the Morgan Hill Municipal Code.

SECTION 3. Reporting. Not later than one year after the effective date of the ordinance, a report shall be prepared for presentation to the Planning Commission and City Council regarding the results of implementation of the ordinance. The report shall include, but is not limited to,

documentation of the number and types of projects subject to the ordinance, explanation of whether and how compliance was achieved, identification of any problems arising from implementation, the costs of enforcement, and any recommendations for revisions to the ordinance.

SECTION 4. Severability. If any section of this ordinance, or part hereof, is held by a court of competent jurisdiction in a final judicial action to be void, voidable or unenforceable, such section, or part hereof, shall be deemed severable from the remaining sections of this ordinance and shall in no way affect the validity of the remaining sections hereof**.**

SECTION 5. CEQA Finding. The Council hereby finds this ordinance is categorically exempt from the requirements of the California Environmental Quality Act ("CEQA") pursuant to Section 15308 of the CEQA Guidelines because it is an action taken by a regulatory agency for the protection of the environment.

SECTION 6. Effective Date; Publication. This ordinance shall take effect thirty (30) days after the date of its adoption. The City Clerk is hereby directed to publish this ordinance pursuant to §36933 of the Government Code.

The foregoing ordinance was introduced at a regular meeting of the City Council of the City of Morgan Hill held on the 23rd day of September 2009, and was finally adopted at a regular meeting of said Council on the 7th day of October 2009, and said ordinance was duly passed and adopted in accordance with law by the following vote:

SECTION 7: Publication. The City Clerk shall certify the adoption of this Ordinance and shall cause a copy of the same to be published pursuant to §36933 of the Government Code.

PASSED AND ADOPTED by the City Council of Morgan Hill at the meeting held on the 7th day of October 2009, by the following vote:

AYES:	**COUNCIL MEMBERS:**	**Larry Carr, Marby Lee, Marilyn Librers, Greg Sellers, Steve Tate**
NOES:	**COUNCIL MEMBERS:**	
ABSTAIN:	**COUNCIL MEMBERS:**	
ABSENT:	**COUNCIL MEMBERS:**	

ATTEST: **APPROVED:**

_____ _____

Irma Torrez, City Clerk **Steve Tate, Mayor**

CERTIFICATE OF THE CITY CLERK

I, Irma Torrez, City Clerk Of The City Of Morgan Hill, California, do hereby certify that the foregoing is a true and correct copy of Ordinance No. 1953, New Series, adopted by the City Council of the City of Morgan Hill, California at the meeting held on this 7th day of October 2009.

WITNESS MY HAND AND THE SEAL OF THE CITY OF MORGAN HILL.

DATE:_____ **_____**

Irma Torrez, City Clerk

7.0 Text of Amended Morgan Hill Ordinance

ORDINANCE NO. XXXX

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORGAN HILL AMENDING CHAPTER 15.65 (SUSTAINABLE BUILDING REGULATIONS) OF THE MORGAN HILL MUNICIPAL CODE TO INCORPORATE REVISIONS MADE BY THE CALIFORNIA ENERGY COMMISSION.

WHEREAS, the City Council has adopted a Sustainable Building Ordinance on October 7, 2009; and

WHEREAS, enforcement will occur once the California Energy Commission approves of Morgan Hill's Sustainable Building Regulations Ordinance and a copy of the ordinance is sent to the California Building Standards Commission; and

WHEREAS, an application has been submitted to the California Energy Commission on October 12, 2009 to receive approval to enforce the sustainable building regulations; and

WHEREAS, the California Energy Commission is requiring the City to change language in the ordinance to ensure development projects comply with California Title 24 Energy Standards; and

WHEREAS, the California Energy Commission is requiring the City to submit a City Council approved cost effectiveness study that addresses 2008 Title 24 energy standards that will become effective January 1, 2010.

The City Council of the City of Morgan Hill does ORDAIN as follows:

SECTION 1. Findings. The City Council finds that:

A. The amendments to the Sustainable Building Regulations are required by the California Energy Commission; and

B. The City is using a cost effectiveness energy study dated October 6, 2009 that was prepared for the City of Palo Alto by Gabel Associates, LLC, an expert in the field of building energy analysis and Energy Code compliance, for local amendments to the 2008

California Energy Code as Palo Alto's cost effectiveness study fully applies to Morgan Hill's Sustainable Building Regulations; and

C. Palo Alto is located within the same geographic and climate zone (Zone 4) as Morgan Hill and has implemented similar sustainable building standards; and

D. The City Council reviewed Palo Alto's cost effectiveness energy study by Gabel Associates, dated October 6,2009, and found that it fully applied to Morgan Hill's sustainable building ordinance and demonstrated the cost effectiveness of these local amendments in Morgan Hill; and

E. The City will include the Gabel Associates study in an application for consideration by the California Energy Commission in compliance with Public Resources Code 25402.1(h)(2); and

F. It is the purpose and intent of this Ordinance to amend the Standards as described herein; and

G. City staff has prepared an amendment to Chapter 15.65 of the Morgan Hill Municipal Code, Sustainable Building Regulations; and

H. The modifications to the 2008 California Building Energy Efficiency Standards required by this Ordinance are reasonably necessary due to local climatic, geologic and topographic conditions, specifically:

    a. Summer ambient temperatures in the City during the months of June, July and August can reach over 100 degrees, creating peak energy load demands that can cause power outages, affecting public safety and causing adverse local economic impacts.
    b. The total square footage of conditioned habitable space within residential and nonresidential buildings in the City is increasing and using more energy and resources than in the past.
    c. The burning of fossil fuels used in the generation of electric power and heating of buildings contributes to climate change, which could result increased temperatures in the City, that could put Morgan Hill homes and businesses at risk for increased water shortages, wildfires and other public health and safety hazards.
    d. Reduction of total and peak energy use as a result of incremental energy efficiency measures required by this Ordinance will have local and regional benefits in the cost-effective reduction of energy costs for building owners, additional available system energy capacity, and a reduction in greenhouse gas emissions; and

I. The study conducted by Gabel Associates, LLC has concluded that the energy efficiency standards contained in this Ordinance are cost-effective. The City Council hereby adopts

as the basis of its findings the conclusions of the study and authorizes the filing the ordinance with the California Energy commission in compliance with Public Resources Code 25402.1(h) (2). This Ordinance shall be enforceable subject to the requirements set forth in such state code; and

J. Nothing in this ordinance is intended to duplicate, contradict, or infringe upon provisions of state law, including the California Building Standards Code. The ordinance and the associated checklist provide many opportunities to achieve required points and credits that do not impact areas where state law has established building standards; and

SECTION 2. Amendment. Chapter 15.65 of Title 15, "Sustainable Building Regulations" of the Morgan Hill Municipal Code is hereby amended to read and provide as follows:

15.65.31 Minimum Standard for Compliance

All projects subject to this chapter shall be constructed using the current guidelines, sustainable building rating systems and sustainable project checklist outlined in Tables 1, 2 and 3 below upon applying for a building permit, unless another version of the checklist was previously approved by a planning entitlement (excluding checklist used at the time of Residential Development Control System allotment commitments.) Failure to comply with any of the terms of this Chapter shall subject the applicant of the applicable project to a full range of enforcement mechanisms set forth in Compliance Section 15.65.050 of this Chapter.

All projects must, at minimum, demonstrate compliance with the California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code.

Compliance with the provisions of this chapter shall be listed as a condition of approval on any design review approval issued by the City for a project to require the project to meet the Minimum Standards for Compliance thresholds identified in this Section.

B. New Residential Construction and Renovation: Residential development involving new construction shall use either the most current Build It Green (BIG) or LEED® for Homes rating system when applying for a building permit unless another version of the checklist was previously approved through a planning entitlement (excluding a checklist that was used at the time of Residential Development Control System allotment commitments) and shall meet the sustainability standard and verification method outlined in Table 1 below. Applicants are encouraged to certify their projects with Build It Green or the U.S. Green Building Council.

   If a project consists of an addition and a remodel, the higher minimum standard shall apply. Projects must meet the minimum category points in Energy, Water, Resource and Indoor Air Quality within the BIG checklist or any other required points in the LEED or Build It Green's checklist. Community points from Build It Green's checklist are excluded from the minimum sustainability standard.

   The Build It Green Multi-family checklist shall only be used when:

   4. The attached units share mechanical or electrical features; or
   5. Attached units share enclosed common space, such as hallways for condominiums; or
   6. There are four (4) or more attached units or single-family dwelling units within the building envelope

Table 1: Sustainable Residential Development Standards

Applicable Project			
Residential, New Construction	**Minimum Sustainability Standard**		**Party Verification**
New Single Family or Multi-Family Developments	**≤ 2,000 sf per unit** 70 BIG points* or LEED® Certified	**> 2,000 sf per unit** 70 BIG points + 1 point per additional 70 sf (150 point maximum)* If using the LEED® rating system, must obtain LEED® Silver Certification	Internal GreenPoint Rated Verification for BIG checklist or Internal LEED ®AP Verification for LEED® checklist
Residential, New Construction Additions	**Minimum Sustainability Standard**	**Verification**	
Addition < 250 square feet	Not Applicable		
Addition ≥ 250 square feet	25 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	
Addition ≥ 700 square feet	50 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	
Renovations and Remodels			
Permit valuation < $100,000	Not Applicable		
Permit valuation** ≥ $100,000	25 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	
Permit valuation** ≥ $250,000	50 points on BIG existing homes checklist*	Internal GreenPoint Rated Verification	

Note: All projects must, at minimum, demonstrate compliance with the California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code.

*Community points in Build It Green's checklist are excluded from the sustainability standard and the project is required to meet minimum point requirements within the checklist categories (energy, water, resource, and indoor air quality.)

** Valuations are subject to change based on the annual Consumer Price Index (CPI) for new construction or other adopted valuation method adopted by the City of Morgan Hill

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F. New Commercial Construction and Renovation: Commercial development involving new construction shall use the most current version of the LEED® rating system and meet the sustainability standard for applicable projects outlined in Table 2 below. If a project consists of a remodel and an addition, the project shall use the highest minimum standard that would apply to the applicable project. Applicants are encouraged to apply for LEED® certification through the U.S. Green Building Council.

Table 2: Sustainable Commercial Development Standards

Applicable Project Type	**Sustainability Standard**	**Verification**
Commercial, New Construction and Additions		
Additions < 1,000 square feet	Not Applicable	
New/Additions Construction ≥ 1,000 square feet	16 LEED® Points	Internal LEED® AP Verification
New/ Additions ≥ 5,000 square feet	LEED® Silver	
Commercial, Renovations/Tenant Improvements		
Permit valuation < $350,000	Not Applicable	
Small, renovations** ≥ $350,000 permit valuation	10 LEED® Points	Internal LEED® AP Verification
Medium, renovations** ≥ $500,000 permit valuation	LEED® Certified	
Large, renovations** ≥ $1,500,000	LEED® Silver	
Note: All projects must, at minimum, demonstrate compliance with the California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code. ** Valuations are subject to change based on the annual Consumer Price Index (CPI) for new construction or other adopted valuation method adopted by the City of Morgan Hill.		

G. New Mixed Use Construction and Renovation: Mixed use development involving new construction shall use the most current version of the LEED® or Build It Green rating system and meet the sustainability standard for applicable projects outlined in Table 3 below. If a project consists of a remodel and an addition, the project shall use the highest minimum standard that would apply to the applicable project. Applicants are encouraged to apply for LEED certification through the U.S. Green Building Council.

Table 3: Mixed Use Development Thresholds and Standards

Applicable Project Type	**Standard**	Verification
Mixed Use, New Construction		
New ≤ 10,000 square feet	The project shall comply with residential minimum sustainability standards for the residential portion of the development; and For the commercial portion, the development shall be required to: o Exceed California Title 24 energy requirements by 10-15% o Provide a built-in recycling center per LEED standards in an easily accessible location, such as the kitchen facility o Use LEED® approved renewable or 10 to 20 percent recycled content carpeting and/or flooring to the extent that is it is included within the project's scope of work. o Use LEED® approved low VOC adhesives, paints, flooring, and furnishings to the extent that it is included within the project's scope of work.	Internal GreenPoint rated verification and/or LEED® AP Verification
New ≥ 10,000 square feet	Same standards apply as in Mixed Use New Construction ≤ 10,000. In addition, the development shall provide bicycle storage and a changing room facility that includes shower(s.) The changing room can be in the restroom instead of a separate room.	
Mixed Use, Additions, Tennant Improvements and Remodels	For additions and remodels, only that component of the project triggering compliance with the minimum standards for compliance in Tables 1 or 2 shall apply. If the project is a major renovation of both residential and commercial components, the applicant shall be allowed to use standards for New Mixed Use buildings.	
Note: All projects must, at minimum, demonstrate compliance with the California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code.		

15.65.41 Submission of Documentation

C. Design Review Documentation: In conjunction with an application for a Design Review permit, the applicant shall submit a letter of acknowledgement indicating that the applicable project will achieve the sustainability standards defined in this Chapter. The letter shall also indicate how many points the applicable project will achieve in each category and/or level of LEED certification, and shall include the contact information of the potential qualified sustainable building professional that will ensure that the plans meet the sustainability standards outlined in this Chapter. The letter shall also commit to compliance with the California Building Energy Efficiency Standards (Title 24, part 6).

D. Building Permit Documentation: Upon submittal of an application for a building permit, any applicable project shall include the most current sustainable building project checklist unless another version of the checklist was previously approved by a planning entitlement (excluding sustainable checklists used at the time of Residential Control Development System allotment commitment). The application must also contain all necessary documentation to clearly demonstrate compliance with the California Building Energy Efficiency Standard (Title 24, part 6).

If the project requires plans, the sustainable project checklist shall be incorporated with the building plans on a separate plan sheet and shall indicate in the general notes or individual detail drawings the measures to be used to attain the sustainability standards defined in this Chapter and the California Building Energy Efficiency Standard (Title 24, part 6), reflecting any changes proposed since the planning entitlement phase (if a planning entitlement was required.)

Applicants are encouraged to consult with a qualified sustainable building professional before submitting plans and/or applying for a building permit.

15.65.51 Compliance

G. Building Inspections, Verification and Occupancy: The Building Division inspection staff or other qualified professionals retained by the City shall verify that the sustainable building measures indicated in the approved permitting documentation are being implemented at the foundation inspection, framing inspection, or other as needed inspections, and prior to final inspection/issuance of a certificate of occupancy.

Throughout each inspection stage, the applicant shall be required to provide evidence of compliance to the Building Division to satisfy the requirements of the Minimum Standards for Compliance in this Chapter. This information shall include, but is not limited to:

1. Any documentation that would be required by the California Building Energy Efficiency Standard (Title 24, part 6) and the LEED or the GreenPoint rated system for certification. The applicant may be required to provide supporting information from qualified professionals (e.g. civil engineer, electrical engineer, Title 24 consultant, commissioning agent, etc.) to certify compliance with each point on the checklist.

   Applicants with projects that are registered with the U.S. Green Building Council are encouraged to submit proof of registration and provide online access to the U.S. Green Building Council's website to the Building Division in order to easily monitor the documentation submittals by the applicant;

2. Documentation that verifies incorporation of the design and construction related credits specified in the project approval;

3. Any additional information that the applicant believes is relevant to determining that a good faith effort has been made to comply with this Chapter.

H. Substitution of Credits: During the compliance review, flexibility may be exercised by the Sustainable Building Compliance Officer to substitute approved points with other points in the LEED® and GreenPoint rating systems. Substitution shall occur only at the request of the applicant. Any substitution credits shall not result in reduced minimum category point requirements within a sustainable building project checklist or required points established in a development agreement. The Sustainable Building Compliance Officer may at no time approve a project that fails to comply with the California Building Energy Efficiency Standard (Title 24, part 6).

I. Non-Compliance: If, as a result of any inspection, the Building Division determines that the project does not or is unlikely to comply with the sustainability measures in the approved permitting documentation and/or plans, a stop-work order may be issued if the Sustainable Building Compliance Official determines that continuation of construction activities will jeopardize the project's ability to meet the required sustainability standard. The stop-work order shall remain in effect until the Sustainable Building Compliance Official determines that the project will be brought into compliance with the approved permitting documentation and this Chapter.

J. Final Determination of Compliance: Prior to the scheduling of a final building inspection for an applicable project, the Building Division shall review all documentation submitted by the applicant and determine that the project has demonstrated compliance with the California Building Energy Efficiency Standard (Title 24, part 6) and whether the applicant has achieved the Minimum Standards for Compliance set forth in this chapter; or demonstrates that measures are in place to assure compliance not later than one year after approval of the final building inspection; or the applicant has made a good faith effort, as defined below, to comply.

If the Building Division determines that the applicant has met the minimum requirements of this Chapter for the project, the final building inspection may proceed, provided the project has received approval of all other inspections required by the Building Official. If the Building Division determines that the required sustainability standard has not been achieved based on the provisions of this Chapter, the Sustainable Building Compliance Official shall find one of the following:

2. Good Faith Effort to Comply: At a minimum, all aspects of the proposed project must comply with the California Building Energy Efficiency Standard (Title 24, part 6). An applicant must submit a written request to the Sustainable Building Official for approval of a Good Faith Effort to Comply. The granting or denial of the Good Faith Effort to Comply shall be provided to the applicant in writing within thirty (30) days of the applicant's written request by the Sustainable Building Compliance Official. If a Good Faith Effort to Comply is granted, the final building inspection may proceed.

   Determination of a Good Faith Effort to Comply shall be made separately for each incomplete item on the sustainable building project checklist. Granting of a Good Faith Effort to Comply does not preclude the need for the applicant to comply with the other items on the sustainable building checklist, such as meeting minimum category point requirements within the checklist. However, the Sustainable Building Compliance Official shall, at minimum, verify that the project as a whole will still demonstrate compliance with the California Building Energy Efficiency Standard (Title 24, part 6) assuming all incomplete items are never completed.

   The Sustainable Building Compliance Official shall determine that the applicant has made a good faith effort to comply with this Chapter when finding that at least ninety percent (90%) of the required sustainability credits have been achieved and either:

   iv. Measures are in place to assure full compliance not later than one year after approval of the final building inspection; or

   v. The incomplete measures involve sustainable building materials and technologies that are no longer available or not yet commercially available, and the applicant will comply by incorporating other measures not later than one year after approval of the final building inspection; or

   vi. The cost for the incomplete sustainable building measure or documentation is disproportionate to the overall cost of the project, and the applicant will comply by incorporating other measures on the checklist not later than one year after approval of the final building inspection. That is, the cost for the sustainability measure or documentation exceeds three (3) percent of the

total cost of construction. The Building Division shall verify the construction costs. The applicant shall be responsible for providing documentation, such as, but not limited to, invoices and estimates from at least three (3) separate sources, to support their positions.

The applicant shall submit evidence that the sustainability measure(s) will be in compliance not later than one year after approval of the final building inspection and may be required to submit a deposit/bond to the Building Division. The Sustainable Building Compliance Official will determine the amount of deposit/bond required based on the cost of the sustainability measure(s.)

The applicant shall be responsible for submitting documentation or contacting the Building Division for an inspection when the sustainable building measure(s) is in place within one year of the date of final inspection approval. If the applicant complies within the one year timeframe, the deposit/bond shall be released in full to the applicant. If the applicant fails to complete measures within the allotted timeframe, the deposit shall be used to enhance the City's sustainable building program.

3. Non-Compliant Project: If the Sustainable Building Compliance Official determines that the applicant has not made a good faith effort to comply with this chapter or if the applicant fails to submit the necessary documentation within the required time period for associated inspections and plan reviews, or if the Sustainable Building Compliance Official determines that the project will not comply with the California Building Energy Efficiency Standard (Title 24, part 6), then the project shall be deemed non-compliant. The final inspection and approval for the project shall be withheld. A final inspection shall not take place until the applicant has implemented equivalent alternate measures approved by the Sustainable Building Compliance Official; or the applicant has been granted an exception under the provisions of this Chapter.

K. The Sustainable Building Compliance Official shall have the responsibility to administer and monitor compliance with the sustainable building requirements set forth in this chapter and to grant Good Faith Efforts to Comply, Exceptions and Exemptions from the requirements, where so authorized.

L. Compliance with the provisions of this chapter shall be listed as a condition of approval on any Design Review Permit or other discretionary permit approval, and on the building plans for building permit approval for any applicable project.

15.65.56 Exceptions

If an applicant believes circumstances exist that make it a hardship and/or not feasible to complete up to ten (10) percent of the required points defined in the Minimum Standards for

Compliance Section of this Chapter and the applicant can demonstrate to the Sustainable Building Compliance Official that the project will comply with the California Building Energy Efficiency Standard (Title 24, part 6) without these points, then the Sustainable Building Compliance Official may authorize a maximum of ten (10) percent of the required points to be waived based on one of the following findings:

4. There is a lack of commercially available sustainable building materials and technologies to comply with the project's scope of work; or

5. The project's scope of work does not allow for enough sustainable checklist points without interfering with other areas outside the project's scope of work.

6. The cost to utilize sustainable building practices, technologies and/or provide documentation exceeds three (3) percent of the project's construction cost. The project's construction costs shall be verified by Building Division staff. The applicant may be required to provide evidence to the Building Division, such as but not limited to, invoices and estimates from three (3) different sources for each sustainable building measure(s) that the applicant believes is contributing to over 3% of the construction cost. The applicant is still required to obtain points that would equate up to 3% of the total construction costs.

The applicant must apply in writing to the Sustainable Building Compliance Official for an exception and shall indicate the circumstances that create a hardship or make it infeasible to fully comply with this Chapter. Determination of exception shall be made separately for each item on the sustainable building project checklist that the exemption applies to. Granting of an exception to comply for one or more items does not preclude the need for the applicant to meet required and minimum category point requirements within the checklist. As necessary, projects that are subject to development agreements shall apply for a development agreement amendment to modify the project's sustainability commitments. At no time shall an exception be granted which may cause a proposed or permitted project to fail to comply with the California Building Energy Efficiency Standard (Title 24, part 6).

The decision of the Sustainable Building Compliance Official shall be provided to the applicant in writing within thirty (30) days of applicant's written request. If an exception is granted, the applicant shall be required to comply with this chapter in all other respects.

If the Sustainable Building Compliance Official determines that it is reasonably possible for the applicant to fully meet the requirements of this chapter or that granting a specific exception might result in a failure to comply with the California Building Energy Efficiency Standard (Title 24, part 6), the request shall be denied and the Sustainable Building Compliance Official shall notify the applicant in writing within thirty (30) days of the applicant's written request. The project and compliance documentation shall be modified to comply with this chapter prior to further review of any pending planning or building application.

15.65.61 Hardship or Infeasibility Exemption

At the time of applying for a building permit, if an applicant believes that circumstances exist that make it a hardship or infeasible to meet the requirements of this Chapter, the applicant may request in writing to the Sustainable Building Compliance Official an exemption of one or more items on the sustainable building project checklist. The applicant shall indicate the maximum threshold of compliance that is feasible for the project; and circumstances that create a hardship or make it infeasible to fully comply with this Chapter. As necessary, projects that are subject to a development agreement shall apply for an amendment to modify the project's sustainability standards**.** The Sustainable Building Official shall have the authority to grant or deny an exemption based on one of the following, however, at no time shall an exemption be granted which may cause a proposed or permitted project to fail to comply with the California Building Energy Efficiency Standard (Title 24, part 6):

4. There are not enough sustainable building measures available within the sustainable building project checklist that are compatible with the project's scope of work; or

5. There is a lack of commercially available sustainable building materials and technologies to comply within the project's scope of work; or

6. The project is or within a non-conditioned building. Non-conditioned spaces that are attached to condition spaces are not eligible to apply under this finding; or

The decision of the Sustainable Building Compliance Official shall be provided to the applicant in writing within thirty (30) days of applicant's written request.

Granting of Exemption: If the Sustainable Building Compliance Official determines that it is a hardship or is infeasible for the applicant to fully meet the requirements of this chapter based on the information provided, the Sustainable Building Compliance Official shall determine the maximum feasible threshold of compliance reasonably achievable for the project which complies with the California Building Energy Efficiency Standard (Title 24, part 6). If an exemption is granted, the applicant shall be required to comply with this chapter in all other respects and shall be required to achieve the threshold of compliance determined to be achievable by the Sustainable Building Compliance Official.

Denial of Exemption: If the Sustainable Building Compliance Official determines that it is reasonably possible for the applicant to fully meet the requirements of this chapter or that granting the requested exemption would potentially cause the project to fail to comply with the California Building Energy Efficiency Standard (Title 24, part 6), the request shall be denied. The project and compliance documentation shall be modified to comply with this chapter prior to further review of any pending planning or building application.

15.65.70 Appeal

B. Any aggrieved applicant or person may appeal the determination of the Sustainable Building Compliance Official regarding: (1) the granting or denial of an exemption pursuant to the Hardship and Infeasibility section of this Chapter; or (2) the granting or denial of a Good Faith Effort to Comply pursuant to this Chapter; or (3) the granting or denial of Exceptions pursuant to this Chapter to the Community Development Director.

Any appeal must be filed in writing with the Community Development Department not later than fourteen (14) days after the date of the determination by the Sustainable Building Compliance Official. The appeal shall state the alleged error or reason for the appeal.

The appeal shall be processed and considered by the Community Development Director in accordance with Appendix B of the 2007 California Building Code.

The applicant may NOT appeal any provision required by the 2008 California Building Energy Efficiency Standards (Title 24, part 6) of the California Building Code.

SECTION 6. Reporting. Not later than one year after the effective date of the ordinance, a report shall be prepared for presentation to the Planning Commission and City Council regarding the results of implementation of the ordinance. The report shall include, but is not limited to, documentation of the number and types of projects subject to the ordinance, explanation of whether and how compliance was achieved, identification of any problems arising from implementation, the costs of enforcement, and any recommendations for revisions to the ordinance.

SECTION 7. Severability. If any section of this ordinance, or part hereof, is held by a court of competent jurisdiction in a final judicial action to be void, voidable or unenforceable, such section, or part hereof, shall be deemed severable from the remaining sections of this ordinance and shall in no way affect the validity of the remaining sections hereof.

SECTION 8. CEQA Finding. The Council hereby finds this ordinance is categorically exempt from the requirements of the California Environmental Quality Act ("CEQA") pursuant to Section 15308 of the CEQA Guidelines because it is an action taken by a regulatory agency for the protection of the environment.

SECTION 6. Effective Date; Publication. This ordinance shall take effect thirty (30) days after the date of its adoption or after approval to enforce the ordinance is received from the California Energy Commission and the Ordinance is filed with the California Building Standards Commission, whichever is later. The City Clerk is hereby directed to publish this ordinance pursuant to §36933 of the Government Code.

The foregoing ordinance was introduced at a regular meeting of the City Council of the City of Morgan Hill held on the 23rd day of September 2009, and was finally adopted at a regular

meeting of said Council on the 7th day of October 2009, and said ordinance was duly passed and adopted in accordance with law by the following vote:

SECTION 7: Publication. The City Clerk shall certify the adoption of this Ordinance and shall cause a copy of the same to be published pursuant to §36933 of the Government Code.

PASSED AND ADOPTED by the City Council of Morgan Hill at the meeting held on the 2nd day of December 2009, by the following vote:

AYES:	**COUNCIL MEMBERS:**	**Larry Carr, Marby Lee, Marilyn Librers, Greg Sellers, Steve Tate**
NOES:	**COUNCIL MEMBERS:**	
ABSTAIN:	**COUNCIL MEMBERS:**	
ABSENT:	**COUNCIL MEMBERS:**	

ATTEST: **APPROVED:**

_____ _____

Irma Torrez, City Clerk **Steve Tate, Mayor**

CERTIFICATE OF THE CITY CLERK

I, Irma Torrez, City Clerk Of The City Of Morgan Hill, California, do hereby certify that the foregoing is a true and correct copy of Ordinance No. XXXX, New Series, adopted by the City Council of the City of Morgan Hill, California at the meeting held on this 7th day of October 2009.

WITNESS MY HAND AND THE SEAL OF THE CITY OF MORGAN HILL.

DATE:_____ _____

Irma Torrez, City Clerk